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BEFORE THE ARIZONA POWER PLANT AND

TRANSMISSION LINE SITTING COMMITTEE

AZ CORP COMMISSION  
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Arizona Corporation Commission

DOCKETED

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IN THE MATTER OF THE APPLICATION  
OF SOUTHERN CALIFORNIA EDISON  
COMPANY AND ITS ASSIGNEES IN  
CONFORMANCE WITH THE  
REQUIREMENTS OF ARIZONA REVISED  
STATUTES SECTIONS 40-360.03 AND  
40-360.06 FOR A CERTIFICATE OF  
ENVIRONMENTAL COMPATIBILITY  
AUTHORIZING CONSTRUCTION OF A  
500kV ALTERNATING CURRENT  
TRANSMISSION LINE AND RELATED  
FACILITIES IN MARICOPA AND LA PAZ  
COUNTIES IN ARIZONA ORIGINATING  
AT THE HARQUAHALA GENERATING  
STATION SWITCHYARD IN WESTERN  
MARICOPA COUNTY AND  
TERMINATING AT THE DEVERS  
SUBSTATION IN RIVERSIDE COUNTY,  
CALIFORNIA

Docket No. L-00000A-06-0295-00130

Case No. 130

AZ CORP COMMISSION  
DOCUMENT CONTROL

2006 DEC 15 P 4: 36

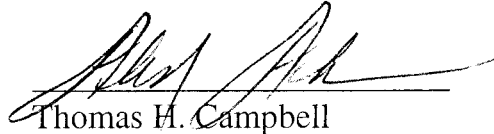
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**NOTICE OF FILING FINAL EIR/EIS EXCERPTS**

In accordance with Chairman Woodall's November 15, 2006, electronic request, Southern California Edison Company ("SCE") submits the attached excerpts from the Final Environmental Impact Report/Environmental Impact Statement ("EIR/EIS") that it may reference during its oral closing argument. SCE's excerpts include the summary of Final EIR/EIS conclusions, discussions of alternatives considered, responses to comments of the U. S. Fish and Wildlife Service relating to the Kofa National Wildlife Refuge, and responses to general comments.

1 RESPECTFULLY SUBMITTED this 15<sup>th</sup> day of December, 2006.

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processes within their respective states, while the BLM will conduct permitting on federal land in both states. This Executive Summary (ES) provides an overview of the Proposed Project and alternatives considered, and the environmental findings and mitigation measures of the EIR/EIS.

## **1.2 Summary of ~~Draft-Final~~ EIR/EIS Conclusions**

This EIR/EIS analyzes the environmental impacts of SCE's Proposed Project as well as alternatives that were developed as a result of public and agency input during the scoping process. Full analysis is presented in the EIR/EIS for seven alternatives to the Devers-Harquahala segment of the Proposed Project, including one project alternative and one alternative to the upgrades proposed west of Devers Substation. As documented in detail in the Alternatives Screening Report (Appendix 1 to the ~~Draft-Final~~ EIR/EIS), 26 additional alternatives were also considered but eliminated from detailed consideration.

Based on comparison of the environmental impacts of the Proposed Project and alternatives, the Environmentally Superior Alternative/Environmentally Preferable Alternative is identified. Based on comparison of the environmental impacts of the Proposed Project and alternatives, the Environmentally Superior Alternative/Environmentally Preferable Alternative has been identified as follows (see additional detail in Section ES.5 of this Executive Summary):

- Harquahala Junction Switchyard (the project would begin at this point)
- Proposed Project route from Harquahala Junction Switchyard to east of Alligator Rock
- Alligator Rock–North of Desert Center Alternative to west of Alligator Rock
- Proposed Project route from west of Alligator Rock to Devers Substation
- Proposed West of Devers upgrades unless determined to be infeasible, in which case the Devers-Valley No. 2 Alternative would be constructed.

The following sections provide the reader with a brief description of the Proposed Project and alternatives (including alternatives analyzed in detail and those eliminated from detailed consideration), a summary of environmental impacts in each environmental issue area, a summary of the comparison of alternatives, and tables listing all impacts identified in the ~~Draft-Final~~ EIR/EIS.

## **1.3 Description of the Proposed Project**

SCE proposes to construct a new 230-mile, 500 kV electric transmission line between Devers Substation in California and Harquahala Generating Substation in Arizona (referred to as “Devers-Harquahala” or D-H) and also to replace 48.2 miles of 230 kV transmission lines in California (referred to as “West of Devers” or WOD upgrades). The upgraded lines would connect directly to the Devers 230 kV bus. The entire project would span 278 miles, with approximately 176 miles in California and 102 miles in Arizona. Section B presents a detailed description of the Proposed Project; the general location is illustrated in Figure ES-1.

The proposed route for the DPV2 transmission line is located generally parallel to SCE's existing DPV1 transmission line route. The majority of the proposed Devers-Harquahala 500 kV transmission line would be constructed within the 130-foot-wide ROW on public land granted in perpetuity to SCE for the DPV2 project by the BLM in 1989. The ROW was granted for a total of 149.9 linear miles of public land between Devers and PVNGS, 57.2 miles in California and 92.7 miles in Arizona, including land managed by the BLM, USFWS, U.S. Department of Defense (DOD), and U.S. Bureau of Reclamation (BOR). Each of the components is described below.

- **Noise:** Permanent noise levels along the ROW would increase due to corona noise from operation of the transmission lines.

While the environmental impacts of the Proposed Project would be less than those of the Devers-Valley No. 2 Alternative, the Devers-Valley No. 2 Alternative is feasible and would be constructed within an existing transmission corridor.

**Conclusion:** Based only on environmental factors, the West of Devers portion of the Proposed Project is preferred over the Devers-Valley No. 2 Alternative. However, the Devers-Valley No. 2 Alternative would also be in an existing transmission corridor, and it would be feasible to construct. If the Proposed Project is found to be infeasible, the alternative would meet project objectives and allow the entire DPV2 Project to be successfully constructed.

### 5.2.3 Definition of Environmentally Superior/Preferred Alternative and BLM Agency Preferred Alternative

The conclusions described above for the various alternatives result in the following environmental superior and BLM agency preferred alternative:

- Harquahala Junction Switchyard (the project would begin at this point)
- Proposed Project route from Harquahala Junction Switchyard to east of Alligator Rock
- Alligator Rock-North of Desert Center Alternative to west of Alligator Rock
- Proposed Project route from west of Alligator Rock to Devers Substation
- The SCE Midpoint Substation and the Midpoint-DSW Substation are equally environmentally superior/preferable
- Proposed West of Devers upgrades *unless* determined to be infeasible, in which case the Devers-Valley No. 2 Alternative would be constructed.

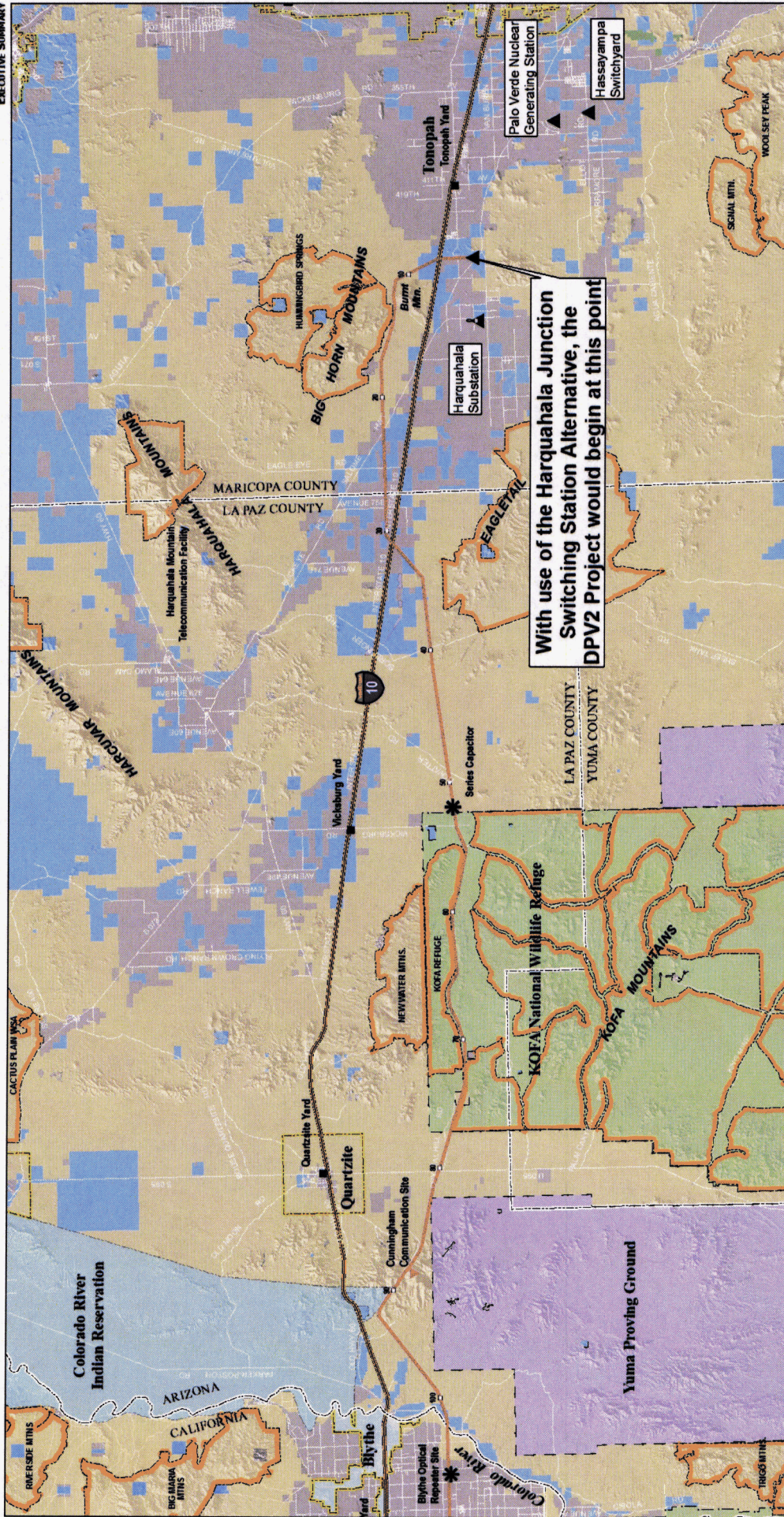
The environmentally superior/preferred transmission line route is illustrated in Figures ES-4a and ES-4b.

### 5.2.4 No Project Alternative vs. the Environmentally Superior Alternative

The No Project Alternative is described in Section 2.2.4 above, and although no specific development scenario is envisioned, certain consequences can be identified without undue speculation. The absence of the Proposed Project may lead SCE or other developers to pursue other actions to achieve the objectives of the Proposed Project. The events or actions that are reasonably expected to occur in the foreseeable future would primarily result from operation of gas-fired turbine generators and new transmission lines. These long-term operational impacts include substantial air emissions and ongoing noise near the generators, as well as visual impacts of the new transmission lines and generators depending on their locations.

Therefore, because the No Project Alternative could also require construction of transmission lines with impacts similar to those described for the Proposed Project, as well as impacts of generation sources, the No Project Alternative is not found to be superior to the Environmentally Superior Alternative as defined above.





**Aspen**  
Environmental Group

PREPARED BY

**Environmentally Superior/  
Preferred Alternative**

Mileposts

**Devers-Palo Verde No. 2  
Transmission Line Project**

**Figure ES-4a  
Environmentally Superior/  
Preferred Alternative (Arizona)**

**OWNERSHIP/JURISDICTIONS (unincorporated areas)**

BLM	Incorporated Areas	Substations
FWS	Wilderness Areas	Series Capacitor
Indian Lands		Construction Yard
Military		Communications Site
State		
Private		

Scale: 0 2.5 5 Miles

North Arrow



## C. Alternatives

This section summarizes the information presented in Appendix 1 to this EIR/EIS, Alternatives Screening Report, which contains detailed documentation and maps of all alternatives suggested for EIR/EIS consideration. This section is organized as follows: Section C.1 is an overview of the alternatives screening process; Section C.2 describes the methodology used for alternatives evaluation; Section C.3 presents a summary of which alternatives have been selected for full EIR/EIS analysis and which have been eliminated based on CEQA criteria; Section C.4 describes the alternatives that have been retained for full EIR/EIS analysis within each individual issue area in Section D; and Section C.5 presents descriptions of each alternative that was eliminated from EIR/EIS analysis and explains why each was eliminated. Section C.6 describes the No Project Alternative.

### C.1 Alternatives Development and Screening Process

One of the most important aspects of the environmental review process is the identification and assessment of reasonable alternatives that have the potential for avoiding or minimizing the impacts of a Proposed Project. In addition to mandating consideration of the No Project Alternative, CEQA Guidelines (Section 15126(d)) emphasize the selection of a reasonable range of technically feasible alternatives and adequate assessment of these alternatives to allow for a comparative analysis for consideration by decision-makers. CEQA Guidelines state that the discussion of alternatives shall focus on alternatives capable of eliminating or reducing significant adverse environmental effects of a Proposed Project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. However, CEQA Guidelines declare that an EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote or speculative.

The Proposed Project is described in detail in Section B of this EIR. Appendix 1 describes the alternatives screening analysis that has been conducted for the Proposed Project and provides a record of the screening criteria and results that were reached regarding alternatives carried forward for full EIR/EIS analysis and alternatives eliminated. Appendix 1 documents: (1) the range of alternatives that was suggested and evaluated; (2) the approach and methods used to screen the feasibility of these alternatives according to guidelines established under CEQA; and (3) the results of the alternatives screening. For alternatives that were eliminated from EIR consideration, Appendix 1 explains in detail the rationale for elimination. "Non-wires alternatives"<sup>1</sup> are addressed as well.

Numerous alternatives to the Proposed Project were suggested during the scoping period (October 25 to November 28, 2005 and December 7, 2005 to January 20, 2006) by the general public, and federal, State and local agencies after SCE filed its Application for a CPCN. Other alternatives were developed by EIR/EIS preparers or presented by SCE in its PEA.

In total, the alternatives screening process has culminated in the identification and preliminary screening of 35 potential alternatives. These alternatives range from minor routing adjustments to SCE's Proposed Project location, to entirely different transmission line routes, to alternative energy technologies, as well as non-wires alternatives.

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<sup>1</sup> "Non-wires alternatives" include methods of meeting project objectives that do not require major transmission lines (e.g., baseload generation, distributed generation, renewable energy supplies, conservation and demand-side management, etc.).

## C.2 Alternatives Screening Methodology

The evaluation of the alternatives used a screening process that consisted of three steps:

- Step 1:** Clearly define each alternative to allow comparative evaluation
- Step 2:** Evaluate each alternative in comparison with the Proposed Project, using CEQA/NEPA criteria (defined below)
- Step 3:** Based on the results of Step 2, determine the suitability of the each alternative for full analysis in the EIR/EIS. If the alternative is unsuitable, eliminate it from further consideration.

### C.2.1 CEQA and NEPA Requirements for Alternatives

After completion of the steps defined above, the advantages and disadvantages of the alternatives are carefully weighed with respect to CEQA and NEPA criteria for consideration of alternatives. Both CEQA and NEPA provide guidance on selecting a reasonable range of alternatives for evaluation in an EIR and EIS, and the requirements are similar. This alternatives screening and evaluation process satisfies both State and federal requirements. The CEQA and NEPA requirements for selection of alternatives are described below.

#### C.2.1.1 CEQA

An important aspect of EIR preparation is the identification and assessment of reasonable alternatives that have the potential for avoiding or minimizing the impacts of a Proposed Project. In addition to mandating consideration of the No Project Alternative, the State CEQA Guidelines (Section 15126.6(e)) emphasize the selection of a reasonable range of feasible alternatives and adequate assessment of these alternatives to allow for a comparative analysis for consideration by decision-makers. The State CEQA Guidelines (Section 15126.6(a)) state that:

*An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation.*

In order to comply with CEQA's requirements, each alternative that has been suggested or developed for this project has been evaluated in three ways:

- Does the alternative accomplish all or most of the basic project objectives?
- Is the alternative feasible (from economic, environmental, legal, social, technological standpoints)?
- Does the alternative avoid or substantially lessen any significant effects of the Proposed Project (including consideration of whether the alternative itself could create significant effects potentially greater than those of the Proposed Project)?

Each of these bullets is described in more detail in the following sections.

### C.2.1.2 Consistency with Project Objectives

The State CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of project objectives” (Section 16126.6(b)). Therefore, it is not required that each alternative meet all of SCE’s objectives. In its Proponent’s Environmental Assessment (PEA), SCE has identified the following four objectives for the Proposed Project:

- **Increase California’s Transmission Import Capability.** According to SCE, DPV2 will increase California’s transmission import capability by 1,200 MW providing greater access to sources of low-cost energy currently operating in the Southwest. The Southwest region currently has over 6,000 MW of surplus generation, some of which may be imported into California. The Southwest Transmission Expansion Planning (STEP) working group independently concluded a similar magnitude of generation is available for import into California. Increased access to energy in the Southwest is forecasted to lower total energy costs and substantially benefit California consumers. SCE’s economic analysis concluded that DPV2 provides \$1.1 billion of benefits to California consumers over the life of the project, and has a benefit-to-cost ratio of 1.7:1.
- **Enhance the Competitive Energy Market.** SCE states that it believes it is in California’s interest to encourage investment in new generation infrastructure through the construction of needed high-voltage transmission lines. This is consistent with the *Energy Action Plan II*, which was adopted in September 2005 by the CPUC and the California Energy Commission for California (CPUC & CEC, 2005). Transmission infrastructure is necessary for a competitive market, and is vital to integrating new generation additions (CPUC, 2004). SCE states that DPV2 is expected to enhance competition amongst energy suppliers by increasing access to the California energy market, providing siting incentives for future energy suppliers, and providing additional import capability. Facilitating a competitive energy market in the Southwest may also create employment opportunities, which are beneficial to the economy and industries in Arizona and California.
- **Support the Energy Market in the Southwest.** The Western Electricity Coordinating Council (WECC) transmission system is an interstate regional system (including Northwestern Mexico and Western Canadian provinces) that links power generation resources with customer loads in a complex electrical network. DPV2 will expand this network and increase the ability for California and the Southwest to pool resources for ancillary services, and provide emergency support in the event of generating unit outages or natural disasters.
- **Provide Increased Reliability, Insurance Value, and Operating Flexibility.** DPV2 would improve the reliability of the regional transmission system, providing insurance against major outages such as the loss of a major generating facility or of another high-voltage transmission line.

The CAISO conducted an independent review of DPV2 and also found the DPV2 project to be a necessary and cost-effective addition to the CAISO controlled grid.<sup>2</sup> The CAISO Board approved the DPV2 project on February 24, 2005 and directed SCE to proceed with the permitting and construction of the transmission project, preferably to be completed by the summer of 2009. However, because the project is designed to provide economic benefits and it is not primarily a reliability enhancement project, SCE did not present a specific project objective related to the date of project operation.

### C.2.1.3 Feasibility

The State CEQA Guidelines (Section 15364) define feasibility as:

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<sup>2</sup> <http://www.caiso.com/docs/09003a6080/34/e4/09003a608034e440.pdf>.

*... capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.*

The alternatives screening analysis is largely governed by what CEQA terms the “rule of reason,” meaning that the analysis should remain focused, not on every possible eventuality, but rather on the alternatives necessary to permit a reasoned choice. Furthermore, of the alternatives identified, the EIR is expected to fully analyze those alternatives that are feasible, while still meeting most of the project objectives.

According to the State CEQA Guidelines (Section 15126.6(f)(1)), among the factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and proponent’s control over alternative sites in determining the range of alternatives to be evaluated in the EIR. For the screening analysis, the feasibility of potential alternatives was assessed taking the following factors into consideration:

- **Economic Feasibility.** Is the alternative so costly that implementation would be prohibitive? The State CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of project objectives or would be more costly” (Guidelines Section 15126.6(b)). The Court of Appeals added in *Goleta Valley v. Board of Supervisors* (2nd Dist. 1988) 197 Cal.App.3d, p. 1181 (see also *Kings County Farm Bureau v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 736 [270 Cal. Rptr. 650]): “[t]he fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are *sufficiently severe* as to render it *impractical* to proceed with project.”
- **Environmental Feasibility.** Would implementation of the alternative cause substantially greater environmental damage than the Proposed Project, thereby making the alternative clearly inferior from an environmental standpoint? This issue is primarily addressed in terms of the alternative’s potential to eliminate significant effects of the Proposed Project, as discussed in Section 2.2.1.3 below.
- **Legal Feasibility.** Does the alternative have the potential to avoid lands that have legal protection that may prohibit or substantially limit the feasibility of permitting a high voltage transmission line?
- **Regulatory Feasibility.** Do regulatory restrictions substantially limit the likelihood of successful permitting of a high-voltage transmission line? Is the alternative consistent with regulatory standards for transmission system design, operation, and maintenance?

Lands that are afforded legal protections that would prohibit the construction of the project, or require an act of Congress for permitting, are considered less feasible locations for the project. These land use designations include wilderness areas, wilderness study areas, restricted military bases, airports and Indian reservations. Information on potential legal constraints of each alternative has been compiled from laws, regulations, and local jurisdictions, as well as a review of federal, State, and local agency land management plans and policies.

- **Social Feasibility.** Would the alternative cause significant damage to the socioeconomic structure of the community and be inconsistent with important community values and needs? Similar to the environmental feasibility addressed above, this subject is primarily considered in consideration of significant environmental effects.
- **Technical Feasibility.** Is the alternative feasible from a technological perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?

#### C.2.1.4 Potential to Eliminate Significant Environmental Effects

A key CEQA requirement for an alternative is that it must have the potential to “avoid or substantially lessen any of the significant effects of the project” (State CEQA Guidelines Section 16126.6(a)). If an alternative is identified that clearly does not have the potential to provide an overall environmental advantage as compared to the Proposed Project, it is usually eliminated from further consideration. At the screening stage, it is not possible to evaluate all of the impacts of the alternatives in comparison to the Proposed Project with absolute certainty, nor is it possible to quantify impacts. However, it is possible to identify elements of an alternative that are likely to be the sources of impact and to relate them, to the extent possible, to general conditions in the subject area.

Table Ap.1-1 in Appendix 1 presents a summary of the potential significant effects of the Proposed Project. This impact summary was prepared prior to completion of the EIR/EIS analysis, so it may not be complete in comparison to the detailed analysis now presented in Section D of this EIR/EIS. However, the impacts in the table are representative of those resulting from preliminary EIR/EIS preparation and were therefore used to determine whether an alternative met this CEQA requirement.

#### C.2.2 NEPA

According to the Council on Environmental Quality’s (CEQ) NEPA Regulations (40 C.F.R. 1502.14), an EIS must present the environmental impacts of the proposed action and alternatives in comparative form, defining the issues and providing a clear basis for choice by decision-makers and the public. The alternatives section shall:

- a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- d) Include the alternative of no action.
- e) Identify the agency’s preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

The CEQ has stated that “[r]easonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the applicant” (CEQ, 1983).

In addition to the CEQ NEPA regulations, CEQ has issued a variety of general guidance memoranda and reports that concern the implementation of NEPA. One of the most frequently cited resources for NEPA practice is CEQ’s *Forty Most Asked Questions Concerning CEQ’s NEPA Regulations* (Forty Questions). Although a reviewing federal court does not always give the Forty Questions the same deference as it does the CEQ NEPA Regulations, in some situations the Forty Questions have been persuasive to the judiciary. For example in one decision, a federal court relied heavily on one of the Forty Questions in interpreting the treatment of alternatives under NEPA [*American Rivers et al. v. Federal Energy Regulatory Commission*, 187 F.3d 1007 (9th Cir. 1999)] (Bass et al., 2001).



In general, alternatives are discussed in Forty Questions Nos. 1 through 7. Question No. 5b asks if the analysis of the “proposed action” in an EIS is to be treated differently than the analysis of alternatives. The response states:

*The degree of analysis devoted to each alternative in the EIS is to be substantially similar to that devoted to the “proposed action.” Section 1502.14 is titled “Alternatives, including the proposed action” to reflect such comparable treatment. Section 1502.14(b) specifically requires “substantial treatment” in the EIS of each alternative including the proposed action. This regulation does not dictate an amount of information to be provided but rather, prescribes a level of treatment, which may in turn require varying amounts of information, to enable a reviewer to evaluate and compare alternatives.*

NEPA (40 C.F.R. 1502.14(c)) also requires the consideration of the No Action Alternative as a basis for comparison even if it would not satisfy the proposed action’s purpose and need. The definition of the No Action Alternative depends on the nature of the project and in the case of the proposed DPV2 project the No Action Alternative describes what would occur without the federal agency’s (BLM) approval.

#### **C.2.2.1 Consistency with Purpose and Need**

CEQ NEPA Regulations (40 C.F.R. 1502.13) require a statement “briefly specifying the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” In addition to the project objectives defined in Section C.2.1.2 above, SCE’s PEA presents the following statement regarding the purpose and need for the DPV2 project:

*Californians have learned from painful experience during the 2000-2001 electricity crisis that the market for electricity in California is susceptible to volatile commodity prices, the exercise of market power, and the risk of supply shortages. Development of new transmission facilities to gain greater access to generation may help California avoid or limit similar experiences. Additionally, development of new transmission facilities to areas where generation has been more easily sited and constructed may spur development of new competitive generation to provide further insurance against future electricity crises.*

#### **C.2.2.2 Feasibility**

The environmental consequences of the alternatives, including the proposed action, are to be discussed in the EIR/EIS in accordance with CEQ NEPA Regulations (40 C.F.R. 1502.16). The discussion shall include “Possible conflicts between the proposed action and the objectives of federal, regional, State, and local land use plans, policies and controls for the area concerned.” Other feasibility factors to be considered may include cost, logistics, technology, and social, environmental, and legal factors (Bass et al., 2001). The feasibility factors are substantially the same as described for CEQA in Section C.2.1.3, above.

#### **C.2.3 Summary of CEQA and NEPA Screening Methodology**

Unlike CEQA’s requirements, NEPA does not require screening of alternatives based on their potential to avoid or lessen significant environmental effects. However, to ensure that the alternatives considered in the EIR/EIS would meet the requirements of both CEQA and NEPA, the stricter requirements of CEQA have been applied as the screening methodology. As such, a reasonable range of alternatives has been considered and evaluated as to whether or not the alternatives meet (1) most of the project objectives/purpose and need, (2) are considered feasible, and (3) would avoid or substantially lessen any significant effects of the Proposed Project.

## C.2.4 Other Considerations for Alternatives

The final project decision by the CPUC will be guided by the Public Utilities Code in addition to the requirements of CEQA. The Public Utilities Code in Section 1002 states that:

*Section 1002. (a) The commission, as a basis for granting any certificate pursuant to Section 1001 shall give consideration to the following factors:*

- (1) Community values.*
- (2) Recreational and park areas.*
- (3) Historical and aesthetic values.*
- (4) Influence on environment, except that in the case of any line, plant, or system or extension thereof located in another state which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 (Chapter 55 (commencing with Section 4321) of Title 42 of the United States Code) or similar state laws in the other state, the commission shall not consider influence on the environment unless any emissions or discharges therefrom would have a significant influence on the environment of this state.*

The CPUC will consider the "community values" as expressed in the CPUC's proceeding on the DPV2 project and in comments on the Draft EIR/EIS. The CPUC anticipates that the final decision will represent a reasonable balancing of the communities' interests, the need to protect environmental resources in the area, and the need for the project.

## C.3 Summary of Screening Results

Alternatives identified by the Applicant, agencies, EIR/EIS preparers, and the public are listed below according to the determination made for analysis. Alternatives considered included alternative route alignments and other transmission alternatives, alternatives that could replace the Proposed Project as a whole, non-wire alternatives, and the No Project Alternative. If so desired, in its decision, the CPUC could elect to combine or match certain alternatives and project components. The potential to create different permutations of alternatives in reality creates many more overall alternatives.

### C.3.1 Alternatives Fully Analyzed in the EIR/EIS

The alternatives listed below have been chosen for detailed analysis in this EIR/EIS through the alternative screening process. These alternatives are briefly described in Section C.4 and in greater detail in Section 4 of Appendix 1. The preliminary conclusions generated during the screening process are presented briefly below and each of these alternatives is evaluated within each environmental issue area of Part D of this EIR. The alternatives are illustrated on Figures C-1a and C-1b (see enclosed CD); an individual map of each alternative is presented in Section 4 of Appendix 1 of this EIR/EIS.

#### *Devers-Harquahala Route Alternatives*

- SCE Harquahala-West Alternative
- SCE Palo Verde Alternative
- Harquahala Junction Switchyard Alternative
- Alligator Rock Alternatives:
  - Alligator Rock-North of Desert Center Alternative
  - Alligator Rock-Blythe Energy Transmission Route Alternative

- Alligator Rock-South of I-10 Frontage Alternative

*West of Devers Alternatives*

- Devers-Valley No. 2 Alternative

*Other Project Alternatives*

- Desert Southwest Transmission Project Alternative

### C.3.2 Alternatives Eliminated from Full Consideration in the EIR/EIS

This EIR/EIS presents two categories of alternatives eliminated from detailed EIR/EIS consideration. Certain alternatives were eliminated because they clearly did not meet project objectives or were infeasible; these alternatives are listed below and described briefly in Section 3.2.1 of Appendix 1 of this EIR/EIS. Other alternatives required more detailed consideration in order to determine whether they should be eliminated; these are listed below as well and are described in Section C.5 and in greater detail in Section 4 of Appendix 1 of this EIR/EIS.

The following 11 alternatives were eliminated after a preliminary alternatives screening process (see Section 3.2.1 of Appendix 1):

- EOR 9000+ Project
- Granite Construction Company
- New 230 kV Line West of Devers
- Southwest Power Link 500 kV No. 2 Transmission Line
- Path 49 Upgrade Project
- New Imperial Valley-Devers 500 kV Transmission Line
- Double-Circuit 500 kV Line (Devers-Harquahala)
- New Devers-Mira Loma 500 kV Transmission Line
- Combination of New Imperial Valley-Devers 500 kV Line and Path 49 Upgrade Project
- Modify DPV1 Compensation
- Alligator Rock-South of DPV2 Corridor Alternative

The alternatives listed below were also eliminated from consideration in the EIR/EIS; they are described and the reasons for their elimination are presented in Section C.5 below and more detailed descriptions are in Section 4 of Appendix 1. Figures C-2a and C-2b (see enclosed CD) depict the alternatives eliminated from consideration. Individual maps of most alternatives are presented in Section 4 of Appendix 1 of this EIR/EIS.

*Devers-Harquahala Route Alternatives*

- SCE North of Kofa NWR-South of I-10 Alternative
- SCE North of Kofa NWR-North of I-10 Alternative
- North of Kofa NWR Alternative
- SCE North of Blythe Alternative
- SCE South of Blythe Alternative
- Paradise Valley Alternative
- Substation Alternatives
  - Mesa Verde Substation Alternative
  - Wiley Well Substation Alternative

#### *West of Devers Alternatives*

- North of Existing Morongo Corridor Alternative
- Composite Conductor Alternative

#### *Other Project Alternatives*

- Convert DPV1 from AC to HVDC Transmission Line
- Underground Alternative

#### *Non-Transmission Alternatives*

- New Conventional Generation
- Renewable Generation Resources
- Conservation and Demand-Side Management
- Distributed Generation

## **C.4 Alternatives Evaluated in this EIR/EIS**

### **C.4.1 Introduction**

As discussed in Section C.2, alternatives were assessed for their feasibility, their ability to reasonably achieve the project objectives, and their potential for reducing the significant environmental impacts of the Proposed Project. Based on these screening criteria, the following alternatives were selected for detailed analysis within this EIR/EIS.

### **C.4.2 Transmission Line Route Alternatives: Devers-Harquahala**

#### **C.4.2.1 SCE Harquahala-West Alternative**

##### ***Description***

As described in SCE's 2005 PEA, the "Harquahala-West Subalternate Route" would begin at the Harquahala Generating Station Switchyard. Rather than departing the Harquahala Switchyard to the east paralleling the existing Harquahala-Hassayampa 500 kV towers, the Harquahala-West Alternative would depart the Harquahala Generating Station Switchyard to the west and follow section lines due west for approximately 12 miles through private and State lands to the El Paso Natural Gas Pipeline utility corridor. This portion of the route parallels Courthouse Road approximately one mile to the north along section lines to the pipeline corridor. At the pipeline corridor, the transmission line would proceed northwesterly along the pipeline corridor for approximately 9 miles to the intersection with the DPV1 transmission line, immediately north of the El Paso Wendon Pump Station. The length of the Harquahala-West Alternative between the Harquahala Switchyard and the junction with the DPV1 line and the proposed route is 21 miles. This alternative is illustrated in Figure Ap.1-1, as well as Figure C-1 (see enclosed CD for both figures).

Currently, Arizona Public Service Company (APS) is planning for the Palo Verde Hub to TS-5 500 kV transmission line that may parallel DPV1 between the PVNGS interconnection area and the Central Arizona Project (CAP) Canal. SCE originally developed the Harquahala-West Alternative because of a concern that the Palo Verde Hub to TS-5 line may be constructed in a manner that would preclude SCE from entering Harquahala Generating Station switchyard from the east. In this case, the Harquahala-West Alternative, which would enter Harquahala Generating Station switchyard from the west, may become

SCE's preferred route. The Certificate of Environmental Compatibility for the APS PV Hub to TS-5 Project was approved by the Arizona Corporation Commission on August 17, 2005 (Case 128).

Even though the final construction plan has not been determined, SCE has stated that the approval of the APS project should not affect the DPV2 project since the two projects are independent of one another unless it reaches the joint party agreement with New Harquahala Generating Company (HGC) and APS. If a joint agreement were to occur then the Harquahala Junction Switchyard could serve as the eastern termination point for the Proposed Project. Terminating the proposed DPV2 project at the proposed Harquahala Junction Switchyard would require SCE to acquire from HGC that portion of the Harquahala-Hassayampa transmission line between the proposed Harquahala Junction Switchyard and Hassayampa Switchyard to complete DPV2 (this is currently proposed as part of SCE's project), and the existing Harquahala-Hassayampa transmission line would also need to be shared by APS to complete the TS-5 Project.

The portion of the Harquahala-West Alternative that follows the pipeline corridor would be located in a designated BLM Utility Corridor. New right-of-way would need to be acquired across private, State, and BLM land. The Harquahala-West Alternative would be constructed using tubular steel pole structures from the Harquahala Generating Station to the Centennial Wash to reduce the affected ground area across farmland. Steel lattice towers (like those used for DPV1) would be used for the portion of the route across desert land west of Centennial Wash to the intersection with DPV1 at the Wendon Pump Station.

Spur roads would be built from the existing access road along the pipeline for construction of towers, and a new access road would be required along the section lines between the Harquahala Switchyard and the pipeline road. A minimum of 160-foot-wide right-of-way would need to be acquired on BLM land, and a minimum 200-foot-wide right-of-way would need to be acquired on State and private land. Also, construction of a new access road for a portion of the alternative would be required, causing about 5.28 acres more ground disturbance than the proposed Devers-Harquahala route.

#### ***Rationale for Full Analysis***

**Project Objectives, Purpose, and Need.** The Harquahala-West Alternative would meet all of the stated objectives of the Proposed Project.

**Feasibility.** After analysis of the land acquisition process following permitting and confirmation that the route would not be affected by the TS-5 project, the Harquahala-West Alternative was found to be feasible. No technical, regulatory, or legal feasibility concerns exist.

**Lessen Significant Environmental Impacts.** This alternative has the potential to lessen environmental impacts as follows.

- **Alternative Length.** The Harquahala-West Alternative would be 14 miles shorter than the proposed route (a total distance of 216 miles versus 230 miles for the 500 kV segment of the Proposed Project), and would require about 48 fewer 500 kV towers than the proposed route, thereby eliminating the temporary and permanent impacts associated with construction of those additional towers.
- **Biological Resources.** This alternative would be almost 5 miles farther south of Burnt Mountain, which contains suitable habitat for the federally listed<sup>3</sup> cactus ferruginous pygmy-owl.
- **Recreation.** The alternative would avoid the Proposed Project's visual and recreational impacts to the Big Horn Mountains Wilderness Area (WA) north of I-10.

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<sup>3</sup> The Federal Endangered Species Act of 1973, as amended, requires all federal agencies to consider "listed" species in their planning efforts and to take positive actions to further the conservation of these species.

- **Agricultural Resources.** The Harquahala-West Alternative would also avoid approximately 1 mile of impacts to agricultural resources along Thomas Road resulting from the Proposed Project.
- **Visual Resources and Transportation.** The alternative would eliminate visual and transportation impacts associated with Proposed Project's two crossings of I-10.

#### C.4.2.2 SCE Palo Verde Alternative

##### *Description*

The proposed DPV2 route for the Devers-Harquahala 500 kV transmission line is generally parallel to SCE's existing 500 kV DPV1 transmission line. However, the DPV2 route differs from DPV1 in that the Proposed Project would not terminate at the Palo Verde Nuclear Generating Station (PVNGS). DPV2 as currently proposed involves building a new 500 kV transmission line from Devers to the Harquahala Generating Station switchyard, and then acquiring the existing Harquahala-Hassayampa 500 kV transmission line. Under the Palo Verde Alternative, the DPV2 line would terminate at the PVNGS Switchyard.

As presented in the 2005 PEA, the Palo Verde Alternative would require construction of a new 500 kV transmission line parallel to the DPV1 transmission line for an additional approximately 14.7 miles to the PVNGS switchyard. This alternative would avoid the need to construct the proposed 5-mile segment from the Harquahala Generating Station Switchyard to the Harquahala Junction. A diagram of the proposed and alternative route construction configurations is shown on Figure C-1a (see enclosed CD), as well as Figure Ap.1-1 (see enclosed CD). Rather than leave the existing DPV1 transmission corridor and follow the existing Harquahala-Hassayampa 500 kV transmission line west to the Harquahala Switchyard, this alternative route would cross from the western side of the DPV1 transmission line to the east, and continue south, parallel to the existing DPV1 and Harquahala-Hassayampa 500 kV lines. The alternative would cross predominantly BLM land to the southeast past Saddle Mountain, and would follow the DPV1 transmission line to the PVNGS Switchyard.

The Certificate of Environmental Compatibility for the Arizona Public Service (APS) PV Hub to TS-5 Project was approved by the Arizona Corporation Commission on August 17, 2005 (Case 128). However, the approval of the APS project does not affect the DPV2 project. If the Palo Verde Alternative were constructed before the southern portion of the PV Hub to TS-5 Project was constructed, it would take the "first position" east of the existing DPV1 line, or vice versa. In either case, both lines would be constructed within a 1,000-foot-wide corridor located east of the existing DPV1 line if that portion of the DPV2 line were to be needed.

For the Palo Verde Alternative, SCE would lease bandwidth from APS and Salt River Project (SRP) between Black Peak Communication Site and PVNGS to support the primary protection circuits.

##### *Rationale for Full Analysis*

**Project Objectives, Purpose, and Need.** The Palo Verde Alternative would meet all of the stated objectives of the Proposed Project.

**Feasibility.** After analysis of the land acquisition process following permitting and confirmation that the route would not be affected by the TS-5 project, the Palo Verde Alternative was found to be feasible. No technical, regulatory, or legal feasibility concerns exist.

**Lessen Significant Environmental Impacts.** This alternative has the potential to lessen environmental impacts as follows.

- **Biological Resources.** Because one mile of agricultural land would be avoided with this alternative, potential impacts to burrowing owls located in the agricultural lands would be reduced.
- **Agricultural Resources.** The Palo Verde Alternative would avoid approximately one mile of agricultural land that would be crossed by the Proposed Project where construction and operation could interfere with agricultural operations.

#### C.4.2.3 Harquahala Junction Switchyard Alternative

##### *Description*

Overview: This alternative would eliminate the need for construction of the last five miles of the Proposed Project (east of the Harquahala Switchyard). In this alternative, a switchyard would be constructed five miles east of the Harquahala Generating Station to allow the new DPV2 transmission line to interconnect with existing lines at that location, eliminating the need to connect at a substation. The switchyard could also allow interconnection of the Arizona Public Service (APS) TS-5 Project at that point, and because the TS-5 Project has already been approved by the Arizona Corporation Commission, it is possible that APS would construct the switchyard before the DPV2 Project is built.

This alternative would require construction of a new switching station east of the Harquahala Generating Station, at the point where the existing Harquahala-Hassayampa and DPV1 transmission lines diverge (a location called "Harquahala Junction"). This alternative would avoid the need to construct the 5-mile segment of the Proposed Project from Harquahala Junction to the Harquahala Generating Station Switchyard. Under this alternative, the Harquahala Junction Switchyard would be built on a site of between 6 and 40 acres in the southwest quarter of Section 25, Township 2 North, Range 8 West, near the intersection of 451st Avenue and the Thomas Road alignment in unincorporated Maricopa County, Arizona. The land is undisturbed desert open space and this alternative is illustrated in Figure Ap.1-1 and Ap.1-1a (see enclosed CD), as well as Figure C-1a (see enclosed CD).

If the Harquahala Junction Switchyard were constructed, it would serve as the eastern termination point for the Proposed Project. Terminating the proposed DPV2 project at the proposed Harquahala Junction Switchyard would require SCE to acquire from New Harquahala Generating Company (HGC) that portion of the Harquahala-Hassayampa transmission line between the proposed Harquahala Junction Switchyard and Hassayampa Switchyard to complete DPV2 (this is currently proposed as part of SCE's project), and the existing Harquahala-Hassayampa transmission line would also need to be shared by APS to complete the TS-5 Project.

In the event the parties reach an agreement and the Harquahala Junction Switchyard Alternative is pursued, the three parties would share the existing Harquahala Junction-Hassayampa transmission line and possibly share the Harquahala Junction Switchyard. This would provide SCE with access to the Hassayampa area, which would obviate the need for the SCE Palo Verde Alternative. The Harquahala Junction Switchyard might also need to be shared by SCE, APS, and HGC.

##### *Rationale for Full Analysis*

**Project Objectives, Purpose, and Need.** Under this alternative, SCE would need to enter into an agreement with HGC and APS in order to acquire the portion of the existing Harquahala-Hassayampa transmission line between the proposed Harquahala Junction Switchyard and Hassayampa Switchyard in order to complete DPV2 and achieve the DPV2 project objectives. If a successful agreement can be established, the Harquahala Junction Switchyard Alternative would meet all of the stated objectives of the Proposed Project.

**Feasibility.** The Harquahala Junction Switchyard Alternative would be both technically and legally feasible. The ACC's approval of the PV Hub to TS-5 Project, including an option for APS to build the Harquahala Junction Switchyard indicates that if APS chooses not to build the switching station, that this alternative would be feasible from a regulatory perspective. If APS decides not to build the Harquahala Junction Switchyard as a part of that project, SCE could pursue construction of the switchyard by seeking a similar approval by the ACC. Otherwise, if APS builds the switchyard itself then this alternative could not feasibly be build by SCE.

**Lessen Significant Environmental Impacts.** This alternative has the potential to lessen environmental impacts as follows.

- **Ground Disturbance.** Eliminating or deferring the need for almost 20 total miles of new 500 kV transmission line segments would reduce the impacts of short-term construction and ground disturbance as well as impacts to permanent habitat and vegetation removal and the conversion of farmland.
- **Biological Resources.** This alternative would eliminate impacts to the agricultural lands that would be crossed between Harquahala Junction and Harquahala Substation with the proposed route. These agricultural lands could also be habitat for biological resources, such as the burrowing owl. Impacts to the federally protected cactus ferruginous pygmy-owls and/or its habitat, which is also historically known to occur in the area east of Harquahala Substation to PVNGS, would be reduced due to the elimination or deferral of almost 20 miles of new 500 kV transmission lines.

#### C.4.2.4 Alligator Rock Alternatives

There are three potential reroutes around the Alligator Rock area that may reduce impacts to cultural resources; they are described in the following sections. A fourth route is addressed in Section 3.2.1.11 of Appendix 1 of this EIR/EIS and was eliminated after preliminary screening. The Alligator Rock alternatives are illustrated in Figure Ap.1-5 (see enclosed CD), as well as Figure C-1 (see enclosed CD).

##### C.4.2.4.1 Alligator Rock–North of Desert Center Alternative

###### *Description*

Approximately 5 miles east of Desert Center (between MPs 149 and 150), the Alligator Rock–North of Desert Center Alternative route would diverge from the Proposed Project route and would head northwest for approximately 1.5 miles before crossing I-10 to the north and continuing for 1.1 miles to an unnamed east-west dirt road along the section line. The route would then turn to the west and would parallel the roadway for approximately 1.4 miles before turning again to the northwest for 0.6 miles. The route would then turn west along another east-west section line, staying just within BLM land (north of private land at Desert Center) for another 0.6 miles before heading southwest for 1.5 miles to Ragsdale Road. The route would parallel Ragsdale Road and I-10 to the north for 3.6 miles before crossing back to the south of Ragsdale Road and I-10 to rejoining the proposed route 1.5 miles later. The 11.8-mile route would be primarily on BLM land and on private land for 3 miles near its western end. The Proposed Project for this segment would be 10.6 miles long.

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###### *Rationale for Full Analysis*

**Project Objectives, Purpose, and Need.** The Alligator Rock–North of Desert Center Alternative would meet all of the stated objectives of the Proposed Project.

**Feasibility.** This alternative would be located mostly on BLM land but would not require amendments to Resource Management Plans. This alternative is regulatorily, technically, and legally feasible.



### ***Rationale for Full Analysis***

**Project Objectives, Purpose, and Need.** The DSWTP Alternative would meet all of the stated objectives of the Proposed Project.

**Feasibility.** The DSWTP Alternative is the subject of a separate EIR/EIS that has been certified by the Imperial Irrigation District. That document found the project not to have any legal, technical, or regulatory feasibility concerns.

**Lessen Significant Environmental Impacts.** This alternative has the potential to lessen environmental impacts as follows.

- **Biological Resources.** The habitat along the south side of I-10 near Alligator Rock is more disturbed than the habitat that lies farther south, because of mortality from automobiles and traffic and from flood control devices by Caltrans. Since DSWTP would diverge from the DPV2 corridor and would be closer to I-10, it would most likely be located in an area with less potential for desert tortoise impacts around Alligator Rock.
- **Cultural Resources.** This DSWTP alternative would avoid a central portion of Alligator Rock ACEC (7,726-acre area of archaeological significance) by diverging north from the proposed DPV2 corridor and closer to I-10 where it is more disturbed. The proposed route would be more sensitive, with two National Register Districts and several other potentially NRHP-eligible sites, whereas the DSWTP alternative would cross one National Register District and only a few other potentially NRHP-eligible sites in this area.

## **C.5 Alternatives Eliminated from Full EIR/EIS Evaluation**

### **C.5.1 Introduction**

As discussed in Section C.1, alternatives were assessed for their ability to reasonably achieve the project objectives and reduce the significant environmental impacts of the Proposed Project. Also, their technical, legal, and regulatory feasibility was evaluated. Based on these screening criteria, the alternatives eliminated from EIR/EIS consideration are listed above in Section C.3.2. The rationale for elimination of each alternative is summarized below and presented in detail in Section 4 of Appendix 1 of this EIR/EIS.

### **C.5.2 Transmission Line Route Alternatives: Devers-Harquahala**

#### **C.5.2.1 SCE North of Kofa NWR-South of I-10 Alternative**

##### ***Description***

This alternative route in Arizona was evaluated in the BLM's EIS (1978) for the DPV1 transmission line. The route was also selected for further evaluation for the 1985 DPV2 project by both SCE and BLM at the time of the previous studies in response to potential concerns regarding impacts to the Kofa NWR and protection of the desert bighorn sheep. SCE also included a similar alternative in the 2005 PEA as Subalternate 1 (North of Kofa NWR, South of I-10 Subalternate Route).

The EIR/EIS did not specifically consider an alternative that would parallel I-10 within the highway right-of-way, because the Arizona Department of Transportation (ADOT) would have to issue an encroachment permit for this use. Any alternative that would occupy an ADOT Highway ROW would be subject to the "Arizona Encroachments in Highway Rights of Way" (Rule No. R-17-3-702) as well as additional

provisions required to obtain ADOT approval for a lease of a longitudinal corridor. However, according to the ADOT Guide For Accommodating Utilities On Highway Rights-Of-Way (1998).<sup>8</sup> "New longitudinal electric lines will *not* be permitted to be installed within the control of access<sup>9</sup> lines in any location other than within ADOT established utility corridors except in special cases." ADOT defines "special cases" very narrowly. Only an underground lease would be considered within the "control of access" area, and this has been done only in one case (in an urban area). An overhead line would not be allowed (McNary, 2006). See Section 4.4.3 in Appendix 1 and Section C.5.4.2 for a discussion about the environmental and feasibility issues associated with an alternative in which the DPV2 line would be installed underground.

The North of Kofa NWR-South of I-10 Alternative would diverge from the proposed DPV2 route approximately 42.5 miles from its origin at Harquahala Switchyard. The route would head northwest approximately 1.5 miles before turning west-northwest towards I-10, and crossing north of Kofa NWR and the New Water Mountains. Approximately 16 miles from where the route diverged, it would parallel I-10 for 7 miles before turning west away from the interstate for another 4 miles. The route would jog to the northwest for 1.5 miles, then west where it would again parallel I-10 for 1 mile, then would jog back to the southwest. As defined by SCE, the route would head southwest for approximately 14.5 miles, crossing through La Posa Recreation Site and Long-Term Visitor Area, eventually rejoining the proposed DPV2 route 0.5 miles north of Yuma Proving Ground and 8 miles west of Kofa NWR.

The North of Kofa NWR-South of I-10 Alternative would be 3.4 miles longer than the proposed route and would cross 0.75 miles of private land, 3 miles of Arizona State land, and 78.7 miles of BLM land (SCE, 2005a, Table 3-3). This alternative is illustrated in Figure Ap.1-2 (see enclosed CD), as well as in Figure C-2a (see enclosed CD).

#### ***Rationale for Elimination***

**Project Objectives, Purpose, and Need.** The North of Kofa-South of I-10 Alternative would meet all of the stated objectives of the Proposed Project. However, it would likely take more time to complete permitting requirements, so it would not likely be completed by the end of 2009.

**Feasibility.** Because the alternative would be on BLM lands outside of an established BLM utility corridor, its approval would require BLM approval for creation of a new utility corridor. Because the Resource Management Plan does not specifically prohibit transmission lines in this area, a new ROW grant would be required, but a Plan amendment would not be necessary. This requirement would not make the alternative infeasible, but adds to the regulatory complexity of the alternative. This alternative would be technically, legally, and regulatorily feasible.

**Potential Environmental Impacts.** This alternative has the potential to cause the following environmental impacts.

- **Additional Length and Ground Disturbance.** This route would be approximately 3.4 miles longer than the proposed route, which will affect the length and intensity of short-term construction impacts and ground disturbance, increasing impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the

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<sup>8</sup> Arizona Department of Transportation, Utility and Railroad Engineering Section. 1998. Online at [http://www.azdot.gov/Highways/utilities/pdf/guide\\_a.pdf](http://www.azdot.gov/Highways/utilities/pdf/guide_a.pdf). June 12.

<sup>9</sup> "Control of Access" refers to locations where owners or occupants of abutting lands and other persons have no legal right of access

chance of noxious weed introduction as well as the removal of more native desert vegetation. In addition, the Proposed Project would be able to utilize existing access roads for access to new transmission towers (though new spur roads would be required). According to SCE, the North of Kofa NWR–South of I-10 Alternative; however, would require an additional 48.3 miles of access and spur roads which would result in permanent ground disturbance and corresponding loss of habitat (the SCE North of Kofa NWR – South of I-10 Alternative would affect 87.8 acres of additional disturbance as is shown in Tables Ap.1-3a and Ap.1-3b in Appendix 1).

- **New Transmission Corridor.** This alternative would establish a new transmission line corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors.
- **Biological Resources – Wildlife.** Although the alternative would avoid crossing the Kofa NWR, it could have greater adverse impacts than the Proposed Project as the route would create a new disturbed corridor through undisturbed BLM Category 2 Desert Tortoise habitat, which could increase impacts, and require more mitigation than building adjacent to an existing line. The Proposed Project in Kofa NWR, while on valuable desert tortoise habitat, does not have a comparative habitat designation since it would not be on BLM-administered land. In addition, there would be a greater potential to impact bighorn sheep with a new corridor along this alternative route.
- **Recreation.** The North of Kofa NWR–South of I-10 Alternative would cross through the heavily used La Posa Recreation Site and Long-Term Visitor Area and adjacent to the La Posa Designated Camping Area. Mineral and gem shows and swap meets during the winter draw tens of thousands of visitors to these recreation areas every year. Construction activities would disrupt recreation in these areas and a new utility corridor through these areas would reduce their recreational value.
- **Visual Resources.** As the transmission line would diverge from the existing DPV1 ROW, it would create new visual impacts with the creation of a new utility corridor. The route would reduce scenic views of the Plomosa Mountains and New Waters Mountains from I-10. Additionally, where the route would cross Highway 95 and the La Posa Plains, the alternative would impact views from residences and recreationists using the La Posa Recreation Site and Long-Term Visitor Area.

#### C.5.2.2 SCE North of Kofa NWR–North of I-10 Alternative

##### *Description*

This alternative was included in SCE's 2005 PEA as Subalternate 4 (North of Kofa, North of I-10 Subalternate), which was considered and eliminated in SCE's PEA. This alternative is similar to the North of Kofa NWR–South of I-10 Alternative (see Section C.5.2.1), except it would cross I-10 twice and Arizona U.S. Highway 60 once to follow the Celeron/All American Pipeline corridor north of I-10. Approval of this alternative would require an amendment to the BLM's Lower Gila South RMP. This alternative is illustrated in Figure Ap.1-2 (see enclosed CD), as well as in Figure C-2a (see enclosed CD).

##### *Rationale for Elimination*

**Project Objectives, Purpose, and Need.** The North of Kofa NWR–North of I-10 Alternative would meet all of the stated objectives of the Proposed Project. However, it would likely take more time to complete permitting requirements, so it would not likely be completed by the end of 2009.

**Feasibility.** Approval of this alternative would require an amendment to the Lower Gila South RMP. The Lower Gila South RMP prohibits overhead lines north of I-10 between townships 16W and 18W (BLM, 1985). This restriction on overhead lines establishes an 18-mile wide strip running north of I-10 to the

northern boundary of the RMP, approximately 17 miles north of I-10. The Lower Gila South RMP prohibits overhead lines in this area due to sensitive lambing grounds for bighorn sheep and sensitive visual resources. The requirement for a plan amendment may not make the alternative infeasible, but it would add a series of regulatory requirements: (a) NEPA clearance of the plan amendment would be required; (b) public noticing would be required by filing in the Federal Register; (c) an extension of the Draft EIR/EIS public review period from 60 to 90 days; and (d) a 60-day Governor's Consistency Review following the publishing of the Final EIR/EIS. The Final EIR/EIS would also have to identify in its title that the EIR/EIS also evaluates a proposed Plan Amendment. It is not known at this time whether BLM would approve the required plan amendment; therefore, regulatory feasibility is not certain. While this alternative would be technically and legally feasible, its regulatory feasibility is in doubt.

**Potential Environmental Impacts.** This alternative has the potential to cause the following environmental impacts.

- **Additional Length and Ground Disturbance.** This route would be approximately 5.1 miles longer than the proposed route, which would affect the length and intensity of short-term construction impacts and ground disturbance, including impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. Therefore the alternative would also have greater permanent ground disturbance and corresponding loss of habitat. (the SCE North of Kofa NWR – North of I-10 Alternative would affect 96.8 acres of additional disturbance as is shown in Tables Ap.1-3a and Ap.1-3b in Appendix 1)
- **New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs. As discussed above under Feasibility, plan amendments would be necessary in order for the BLM to grant approval of this alternative ROW due to its location through townships 16W to 18W north of I-10.
- **Biological Resources – Wildlife.** Although the alternative would avoid crossing the Kofa NWR, it would have a greater adverse impact to bighorn sheep than the Proposed Project. The alternative's route between townships 16W and 18W would result in impacts to bighorn sheep lambing grounds identified in the BLM's Lower Gila South RMP, an area deemed unsuitable for overhead transmission lines. Additionally, the route would pass through BLM Category 2 Desert Tortoise habitat, which could increase impacts and mitigation for tortoises.
- **Recreation.** The North of Kofa NWR–North of I-10 Alternative would cross through the La Posa Designated Camping Area in two locations as well as crossing the La Posa Recreation Site and Long-Term Visitor Area. This alternative would cross 3.5 more miles of recreation area than the North of Kofa NWR–South of I-10 Alternative, with construction potentially disrupting recreation associated with the winter mineral and gem shows and swap meets and reducing the overall recreational value of these areas.
- **Visual Resources.** As the transmission line would diverge from the existing DPV1 ROW, the alternative would create new visual impacts with the creation of a new utility corridor and would impact

views both to the north and south of I-10 in different areas, at the two I-10 crossings east and west of the Plomosa Mountains, and the crossing of Highway 60 southwest of Brenda. Similar to the North of Kofa NWR-South of I-10 Alternative, the route would reduce scenic views of the Plomosa Mountains and New Waters Mountains from I-10. Additionally, where the route would cross Highway 95 and the La Posa Plains, the alternative would impact views from residences and recreationists using the La Posa Recreation Site and Long-Term Visitor Area.

### C.5.2.3 North of Kofa NWR Alternative

#### *Description*

In order to reduce the impacts of the SCE-identified subalternate routes and still avoid the Kofa NWR, the EIR/EIS team developed an alternative that would be shorter and further south than the SCE alternatives. This 37-mile alternative would diverge from the proposed route at the series capacitor just east of the Kofa NWR. It would replace a proposed route segment that is approximately 27 miles long. The alternative route would turn to the north and would parallel the boundary of Kofa NWR for 2.5 miles to its northeast corner. At that point the route would turn to the west and would continue to parallel Kofa NWR boundary for 4.5 miles to the eastern boundary of the New Water Mountains WA where the route would turn to the northwest for approximately 7.0 miles until the route is north of the New Water Mountains and approximately 1.8 miles south of I-10. The route would travel northwest and then south-southwest rejoining the Proposed Project approximately 1.25 miles west of the boundary of Kofa NWR and south of Quartzsite. This alternative is illustrated in Figure Ap.1-2 (see enclosed CD), as well as in Figure C-2a (see enclosed CD).

#### *Rationale for Elimination*

**Project Objectives, Purpose, and Need.** The North of Kofa Alternative would meet all of the stated objectives of the Proposed Project. However, it would likely take more time to complete permitting requirements, so it would not likely be completed by the end of 2009.

**Feasibility.** While the route would be outside of the BLM utility corridor (within one mile of I-10), BLM states that no plan amendment would be required since construction of a transmission line is not prohibited by the Lower Gila South Resource Management Plan in this area. Thus, overall this alternative would be technically, legally, and regulatorily feasible.

**Potential Environmental Impacts.** This alternative has the potential to cause the following environmental impacts.

- **Additional Length and Ground Disturbance.** This route would be approximately 10 miles longer than the proposed route, which will affect the length and intensity of short-term construction impacts and ground disturbance, affecting air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. In addition, the Proposed Project would be able to utilize existing access for access to new transmission towers. The North of Kofa NWR Alternative, however, would require additional access and spur roads which would result in permanent ground disturbance and corresponding loss of habitat. (the SCE North of Kofa NWR Alternative would affect 127.6 acres of additional disturbance as is shown in Tables Ap.1-3a and Ap.1-3b in Appendix 1)

- **New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs.
- **Biological Resources.** The EIR/EIS team completed a biological survey of the entire length of the North of Kofa Alternative on December 5-7, 2005. The following biological factors were considered and evaluated during the survey, including:
  - Suitable habitat or presence of nine federally listed species protected under the Endangered Species Act (i.e., threatened, endangered, or candidate for La Paz County)
  - Suitable habitat or presence of State listed wildlife species (i.e., Wildlife of Special Concern in Arizona [WSCA])
  - Plants protected under the Arizona Department of Agriculture's (ADA) Arizona Native Plant Law
  - Suitable habitat or presence of sensitive status species listed by the BLM that occur in the Yuma field office area
  - Birds protected under the Migratory Bird Treaty Act
  - ADA and BLM listed noxious weed species.

The results of the survey in regards to the above-mentioned biological regulations and concerns included the following resources:

- Suitable habitat for the Sonoran Desert tortoise (BLM sensitive and State WSCA) was identified along almost the entire route.
- Suitable habitat and suitable migratory habitat for the desert bighorn sheep was identified along the route within the Plomosa Mountains, and adjacent to the route north of the New Water Mountains and New Water Mountains Wilderness Area.
- Loggerhead shrikes, a BLM sensitive status bird, were observed near the southwest and southeast ends of the route.
- No special status bat species were observed; however, a few mineshafts were observed near the central portion of the route on BLM and private land.
- Several species of plants protected under the ADA Arizona Native Plant Law were observed along the route. Protection categories did not include any Highly Safeguarded plants.

Overall, this alternative would require disturbance of a 37-mile corridor that is relatively undisturbed at this time. A new access road would need to be constructed, following portions of existing unpaved or 4-wheel drive roads. In addition, disturbance would occur in areas with no existing access roads, such as mountain foothills. Bighorn sheep inhabit the mountainous areas of western Arizona and migrate through the foothills when moving from one area to another. When comparing this alternative route to the proposed route through the Kofa NWR, the same types of biological resources would be affected; however, the degree of effect would increase significantly when assessing impacts to the bighorn sheep due to the creation of a new corridor through undisturbed wilderness. The North of Kofa Alternative would pass through Game Management Unit (GMU) 44B South, which includes the Plomosa and New Water Mountains and has had a downward trend from 2002 to 2003. The alternative route would affect an area not currently crossed by a utility corridor, and would require disturbance of much more land than the proposed route.

- **Cultural Resources.** The following four archaeological sites were identified and recorded during the records search on December 12, 2005 and survey performed by the EIR/EIS team on December 13–19 2005, including:
  - A historical-period can scatter with a filled-in mine shaft, located where Plomosa Wash crosses the project area. Some modern debris is present along with a trailer and modern wells that appear to still at times be in use;
  - A historical-period site approximately 0.5 miles north of Site #1, where Scaddan Wash intersects the project area. It consists of three terrace rock features and a light can scatter; where top terrace feature meets desert pavement, there is a rock foundation of uncertain function approximately 4 feet on a side;
  - Two rock rings, likely Native American in origin, south of the pot break (discussed under Site #5 below); and
  - A group of five mine shafts that are likely modern, although a historical-period tobacco tin was present nearby; the shafts are located south of the historical-period site at Plomosa Wash (Site #1).

Two other possible sites were recorded, that could either be designated sites or isolated occurrences; in either case, recording has exhausted their research potential. These possible sites include:

- A prehistoric pot break consisting of approximately 100 sherds; and
- A chipping station, with approximately 25 artifacts (secondary and tertiary flakes) of green quartzite, all from same cobble, in an area approximately 5 meters in diameter.

These two possible sites are most likely isolated occurrences and as such they would not be considered significant and no further investigations are necessary. Approximately 20 other isolated occurrences were recorded, primarily cairns or mining test pits, as well as a few cans, flakes, and one core. As these do not qualify as sites, they cannot be considered significant and no further investigations are necessary.

- **Visual Resources.** As the transmission line would diverge from the existing DPV1 ROW, the alternative would have potentially significant visual impacts resulting from the creation of a new utility corridor. The route would affect scenic views of the Plomosa Mountains and New Waters Mountains from I-10, as well as the potential future Dripping Springs ACEC.

#### C.5.2.4 SCE North of Blythe Alternative

##### *Description*

This alternative was included in SCE's 2005 PEA as Subalternate 2 (North of Blythe through Colorado Indian Reservation), which was considered and eliminated in PEA Section 3.1.2.1. The North of Blythe Alternative would cross agricultural land and would pass through a portion of the Colorado River Indian Tribe (CRIT) Reservation. It would be 3.3 miles longer than the proposed route. This alternative is illustrated in Figure Ap.1-3 (see enclosed CD), as well as in Figures C-2a and C-2b (see enclosed CD).

Based on information provided on Subalternate 2 in SCE 1988 Amended PEA, the North of Blythe Alternative would depart the proposed DPV2 route approximately 1.5 miles west of Eagletail Mountains and 3 miles south of Salome Emergency Airfield. The route would then meet and parallel I-10 in a northwesterly direction below Bear Hills eventually crossing I-10 and then crossing Arizona U.S. 60 approximately 4 miles northwest of the I-10 crossing. The route would traverse the Plomosa Mountains and the Dome Rock Mountains before passing through the CRIT Reservation and heading towards the Colorado River. After crossing the river and traversing west to a point 4 miles north of Blythe Airport, the route would

turn in a southwesterly direction for approximately 7 miles, where it would cross I-10 and rejoin the proposed route one mile south of I-10.

**Potential Alternative Variation.** Because this alternative, as designed by SCE and illustrated in Figure Ap.1-3 (see enclosed CD), would rejoin the Proposed Project west of Blythe, use of the Midpoint Substation designated by SCE would not be possible. The North of Blythe Alternative could be used with either the Mesa Verde or Wiley Well Alternative Substation sites, but as noted in Section C.5.2.7 below these two alternatives (suggested by SCE) have been eliminated from consideration in this EIR/EIS due to their greater impacts than the Midpoint Substation. Therefore, in order to ensure that this alternative was feasible, a substation location would have to be identified.

As suggested by the City of Blythe during scoping, this alternative could also be designed to pass adjacent to the existing power plant (BEP I) and approved (but not constructed) power plant (BEP II), within the City of Blythe. With this route modification, the alternative would follow the 6.7-mile corridor mostly adjacent to an existing Imperial Irrigation District (IID) 161 kV transmission line from Buck Boulevard Substation to Midpoint Substation where it would join the existing DPV1 and proposed DPV2 corridor. The 6.7-mile route has also been proposed for the Blythe Energy Project 230 kV Transmission Line Modifications (CEC, 2006).

#### ***Rationale for Elimination***

**Project Objectives, Purpose, and Need.** The North of Blythe Alternative would meet all of the stated objectives of the Proposed Project.

**Feasibility.** The Lower Gila RMP restricts overhead power lines north of I-10 between townships 16W and 18W and establishes an approximately 18-mile wide strip running north of I-10 (essentially to the northern boundary of the RMP approximately 17 miles north of I-10) through which overhead power lines cannot be built. The requirement for a plan amendment may not make the alternative infeasible, but it would add a series of regulatory requirements: (a) NEPA clearance of the plan amendment would be required; (b) public noticing would be required by filing in the Federal Register; (c) an extension of the Draft EIR/EIS public review period from 60 to 90 days; and (d) a 60-day Governor's Consistency Review following the publishing of the Final EIR/EIS. The Final EIR/EIS would also have to identify in its title that the EIR/EIS also evaluates a proposed Plan Amendment. It is not known at this time whether BLM would approve the required plan amendment; therefore, regulatory feasibility is not certain.

Overall this alternative would be technically feasible, but its legal feasibility would depend upon required approval of the CRIT. According to SCE, the CRIT Tribal Council denied SCE a right-of-way for the DPV1 line in 1977, indicating that it would adversely impact the tribe. At the time of SCE's 1988 amended PEA, SCE stated that the CRIT indicated that a right-of-way would not be approved for the proposed DPV2 project. Regulatory feasibility is in question due to the required amendment of the BLM Resource Management Plan.

**Potential Environmental Impacts.** This alternative has the potential to cause the following environmental impacts.

- **Alternative Length and Ground Disturbance.** The North of Blythe Alternative would be 3.3 miles longer than the proposed route, which would increase the length and intensity of short-term construction impacts and ground disturbance, affecting air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. Overall,



SCE states that 138 acres of permanent ground disturbance would occur with this alternative from where it would leave the DPV1 route to where it would rejoin the DPV1 ROW, compared to 11.7 acres for the equivalent portion of the proposed route (SCE, 2005a).

- **New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1/DPV2 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs. An amendment to the RMP would be required in order for the BLM to grant approval of this alternative ROW (see discussion under Feasibility above). Finally, this new ROW may set precedent for future development of utilities in this corridor (future land use impacts).
- **Biological Resources.** This alternative would pass through Arizona Game and Fish Department (AGFD) Game Management Units 44B (includes Plomosa Mountains) and 43A (includes Dome Rock Mountains), found to be bighorn sheep habitat with good and increasing populations since the mid-1990s, which was last surveyed for population in 2003. This alternative would create potentially significant impacts to high-quality bighorn sheep habitat, including a major movement corridor between Ibex Peak/Haystack Peak and Lazarus Tanks mountain block and nearby lambing areas in the north Plomosa Mountains. Because the North Plomosa lambing area is active, this alternative poses greater impacts to bighorn sheep than the Proposed Project, even though the proposed route passes through the Kofa NWR (Henry, 2005).

This alternative would increase disturbance and removal of vegetation by 126 acres. This could significantly increase the chance that special status species would be affected by the increase in disturbed area. Also, this increase in disturbed area could increase the chance of noxious weed introduction and also remove more native desert vegetation. The alternative would have greater impacts to vegetation in desert washes, especially between the McCoy and Big Maria Mountains and many smaller washes that braid through the bajadas adjacent to the mountains.

The North of Blythe Alternative has the potential for significant impacts on the desert tortoise. This route would be in BLM Category 2 and 3 Desert Tortoise habitats, as would the Proposed Project. This species likely occurs in the areas north of I-10, particularly near the base of the McCoy and Big Maria Mountains. The impacts to desert tortoise may be greater with this alternative than the Proposed Project because the route would traverse more native habitat than the Proposed Project. Without focused survey information, however, a definitive conclusion on the actual impacts to tortoises cannot be made.

Without focused surveys for burrowing owl, other special status plant and wildlife species, and listed plants, it is difficult to determine the impacts of this alternative on these species. This alternative appears to cross a larger acreage of native habitat than does the proposed route, however, so there may be a greater likelihood that there will be impacts to these species than with the Proposed Project.

- **Agricultural Resources.** This alternative would cross agricultural land on the CRIT Reservation and would create potentially significant impacts to Prime Farmland in Parker Valley. The North of Blythe Alternative would cross approximately 1.25 miles of agricultural land north of the City of Blythe, a portion of which is categorized as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland). The North of Blythe Alternative would also run adjacent to and cross lands currently under Williamson Act contract. The route would run parallel to Williamson Act Prime contract lands in Section 33, Township 05 South, Range 23 East and would cross a small portion of a

Williamson Act Prime contract in Section 19, Township 05 South, Range 24 East. Conversion of Farmland and Williamson Act contract lands due to the construction of transmission towers would be considered significant and potentially unmitigable impacts. This would be less, however, than the Proposed Project, which would cross 9.8 miles of agricultural lands, much of which would be categorized as Farmland and Williamson Act contract lands, and impacts to which would also be considered significant and potentially unmitigable. The North of Blythe Alternative would traverse only a quarter of the amount of Williamson Act contract lands compared to that crossed by the Proposed Project. While the types of impacts caused by the North of Blythe Alternative would be the same as those caused by the Proposed Project, the extent of impacts would be less than a quarter of the Proposed Project's impacts over the same portion of the route.

- **Visual Resources.** The presence of the new line could create significant impacts in a new corridor in the northern portion of the Plomosa and Dome Rock mountains, in the Colorado River riparian area, and through agricultural land in the Palo Verde Valley. Impact to scenic values for views from I-10 with strong contrasts south of Bear Hill and west of Blythe Airport; State Route (SR) 95 in the La Posa Plains; U.S. 60 west of Brenda, Poston Road, and Midland Road; and U.S. 95 north of Blythe. Significant impact to residential views near Brenda and along the Colorado River (2005 PEA references 1988 PEA, p. 10-78 – 10-84).

This alternative would create new significant visual impacts as the transmission line converges on, parallels, and then crosses to the north side of I-10 and then crosses U.S. 60 southwest of Brenda. It would also result in substantial visual impacts to residents on the west side of Brenda. This alternative would also cause visual impacts (a) to the La Posa Designated Camping Area at the Plomosa Campground (viewing south), (b) on views from Arizona 95 at the crossing, and (c) to back-country recreationists accessing the Boyer Gap area. Further west, the North of Blythe Alternative would also cause significant visual impacts at the crossings of the Colorado River and U.S. 95. Visual impacts may also occur on views from the Midland Long-Term Visitor Area north of Blythe. Significant visual impacts would occur as the North of Blythe Alternative route crosses the southern end of the McCoy Mountains and then I-10, approximately 4 miles west of Mesa Verde.

While the North of Blythe Alternative would avoid the visual impacts on Kofa NWR and the adverse visual impacts on the La Paz Arroyo-Copper Bottom Pass area, this alternative would result in significant visual impacts at the crossings of U.S. 95 and the Colorado River that would be greater than the Proposed Project given the lack of similar infrastructure features in the vicinity of the northern crossings.

- **Cultural Resources.** There would be greater impacts to cultural resources with this alternative, especially across the CRIT reservation. Consultation with tribal officials would be necessary and tribal approval of the route would be required.

The Proposed Project segment that would be replaced by this alternative includes 6 potentially NRHP-eligible archaeological sites: 2 prehistoric trails; 2 prehistoric temporary camps; 1 prehistoric cobble quarry with ceramic sherds; and 1 prehistoric and historic trail. The North of Blythe Alternative crosses substantially more cultural resources along its alignment. At McCoy Wash, the line proceeds east along the northern edge of Palo Verde Mesa, and parallels an existing transmission line along the southern flanks of the Big Maria Mountains where it crosses the Palo Verde Valley to the Colorado River and the Colorado River Indian Tribes (CRIT) Reservation. Beyond the political implications of crossing tribal lands, there would be very significant impacts to archaeological sites and sites of religious value to the CRIT. Most of the route parallels or coincides with previous corridor surveys, so that sites types and densities can be estimated fairly accurately. From the west to the east, until reaching the Big Maria Mountains, the route has low archaeological sensitivity (small discrete sherd or lithic scatters on sheet wash alluvial surfaces or between sand dunes). Towards the Colorado River and the Mule Mountains though, the corridor reaches the well-known Colorado River Geoglyphs. This

is an area of extensive and complex ceremonial ground figures, trails, cleared circles, cairns, chipping stations, and habitation sites. Four of the geoglyph sites occur directly within this alternative, including a large spectacular and unique anthropomorphic geoglyph interpreted to be a dancing shaman holding a snake or lightning rod. This geoglyph and its associated chipping stations, cleared circles, sherds, scatters, cairns, and other remains, along with many other geoglyphs along the river have been approved for NRHP as a Thematic District. Given the sacred nature of the sites along the northern alternative and the need to cross the CRIT Reservation, this alternative has much higher cultural resources sensitivity than the preferred route.

- **Socioeconomics and Public Utilities.** The North of Blythe Alternative route would be approximately 3.3 miles longer than the Proposed Project. The additional distance would require additional water for dust suppression activities, but this additional requirement would not create significant impacts. The North of Blythe Alternative would be located away from the El Paso Natural Gas Pipeline that traverses Kofa NWR, but would follow a portion of the Celeron/All American Pipeline. Although there is always potential for a collocation accident to disrupt utilities, it is unlikely that construction of either route would disrupt the adjacent pipeline.
- **Roadway Crossings.** The transportation impacts of this potential alternative would be greater than the proposed route segment because it would require 2 additional crossings of Interstate 10 (I-10), one additional crossing of Arizona State Highway 60 (SR-60), and one crossing of California State Highway 95 (SR-95).

#### C.5.2.5 SCE South of Blythe Alternative

##### *Description*

The South of Blythe Alternative would begin 2 miles south of the city of Blythe and would cross the Palo Verde Valley in California, about 10 miles south of the DPV1 route, crossing through a portion of Imperial County (see Figure Ap.1-4, as well as Figures C-2a and C-2b, all on enclosed CD). This alternative was included in SCE's 2005 PEA as Subalternate 3 (South of Palo Verde Valley through Imperial County Subalternate).

The alternative route would depart from the proposed DPV2 route 0.5 miles east of the Colorado River and would head southwest for approximately 14 miles. In this segment the route would parallel the Colorado River. One mile north of the Cibola National Wildlife Refuge, the route would turn west, cross the Colorado River into Imperial County, California (about 10 to 12 miles south of the existing DPV1 crossing), and would traverse farmland in the southern Palo Verde Valley. The route would continue west 1.5 miles from the Colorado River and would then turn in a northwesterly direction for approximately 15 miles towards the proposed route, crossing into Riverside County and then through the Mule Mountains. This alternative would rejoin the Proposed Project approximately 1.5 miles south of I-10 and 15 miles west of Blythe (note that this alternative would rejoin the DPV1 route west of the location of the Midpoint and Mesa Verde Substation sites [see Section C.5.2.7 below]).

The South of Blythe Alternative would be 11.5 miles longer than the proposed route. The alternative would cross 4 miles of farmland, which would be less than the 10 miles of farmland on the proposed route.

##### *Rationale for Elimination*

**Project Objectives, Purpose, and Need.** The South of Blythe Alternative would meet all of the stated objectives of the Proposed Project.

**Feasibility.** The South of Blythe Alternative would be technically and legally feasible. Amendments to applicable BLM management plans would not be required because the route would not go through a planning area that prohibits transmission lines, even though the South of Blythe Alternative route would be outside of an established BLM utility corridor. Applicable plans are the Lower Gila North Management Framework Plan and the Lower Gila South Resource Management Plan (Arizona) and in California the Northern and Eastern Colorado (NECO) and the California Desert Conservation Area (CDCA) Plans. Therefore, BLM has the authority to permit South of Blythe Alternative route with NEPA clearance, for which this EIR/EIS would be sufficient. Overall this alternative would be technically, legally, and regulatorily feasible.

Because of the location at which this alternative would rejoin the Proposed Project (approximately 1.5 miles south of I-10 and 15 miles west of Blythe), the South of Blythe Alternative could only be used with the Wiley Well Alternative Substation site. This alternative substation site has been eliminated from consideration as described in Section C.5.2.7.2 below. Therefore, identification of an appropriate substation for connection to the DSWTP would be required if this alternative were carried forward for analysis. Because the South of Blythe Alternative has been eliminated due to environmental reasons (see below), further investigation into an alternative substation site was not pursued.

**Potential Environmental Impacts.** This alternative has the potential to cause the following environmental impacts.

- **Alternative Length and Ground Disturbance.** The South of Blythe Alternative would be 11.5 miles longer than proposed route, which would increase the length and intensity of short-term construction impacts and ground disturbance, affecting air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, water use for dust suppression, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. The route would also cross several sizeable desert washes in the area of the Mule Mountains between the agricultural areas south of the Palo Verde Valley and the western junction with the Proposed Project. In addition there are many smaller washes that braid through the bajadas adjacent to the mountains, which could be disrupted by construction.
- **New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1/DPV2 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs. Amendment would be needed in order for the BLM to grant approval of this alternative ROW (see discussion under Feasibility above).
- **Biological Resources.** Near the Colorado River crossing, this route would also be only 1.5 miles from the Cibola Wildlife Refuge where there is an abundance of waterfowl, proposed critical habitat for the southwestern willow flycatcher (SWWFL), and suitable habitat for the Yuma clapper rail (YCR). This route would parallel the Colorado River for approximately 16 miles, which could lead to more impacts to the abundant waterfowl or federally listed species (YCR and SWWFL). More bird collisions with the conductors at the river crossing would be likely to occur due to this route's proximity to the Colorado River (i.e., waterfowl habitat).

Although focused surveys have not been completed for this alternative, there would also be potentially greater desert tortoise impacts, because the alternative may traverse a greater amount of native habitats. The desert tortoise likely would occur in the native habitat areas (probably in low numbers) located west of the agricultural areas of Blythe to the western junction with the route of the Proposed Project. Without focused surveys for burrowing owl, other special status plant and wildlife species, and listed plants, it is difficult to determine what the impacts of this alternative will be on these species. But, this alternative appears to cross a larger acreage of native habitat than does the proposed route, so there may be more likelihood that there will be impacts to these species than with the Proposed Project.

- **Recreation.** The South of Blythe Alternative would be located south of the proposed route, and would create a new transmission line corridor across the southwestern edge of the Mule Mountains ACEC, which is a sensitive natural area that would be avoided by the Proposed Project. The route would also be parallel to the Colorado River along a great length of the river, where recreational use of the river is common (see discussion under Visual Resources, below).

In addition, hikers, ORV, and recreational users along the Bradshaw Trail (located in southeastern Riverside County and Imperial County near the Mule Mountains) would be potentially impacted by this alternative. The Bradshaw Trail, Riverside County's first road, was blazed by William Bradshaw in the gold rush of 1862 as an overland stage route beginning at San Bernardino and ending at La Paz, Arizona (now Ehrenberg, Arizona). Today, the east-west trail is a 65-mile graded road that traverses mostly BLM land parallel to I-10 to the south and begins approximately 3 miles north of the community of North Shore near the Salton Sea State Recreation Area (near Dos Palmas, California). The eastern end of the trail is 2 miles southwest of the community of Ripley near the Colorado River. The trail crosses about 18 miles southwest of Blythe, California.

- **Visual Resources.** As the transmission line diverges south from the Proposed Project route at the Colorado River, this alternative would create new significant visual impacts. Views from the East Levee Road, which is parallel to the route and adjacent to the Colorado River, would be adversely affected, as would some views from the Colorado River (depending on tower placement). Adverse visual impacts would also occur at the BLM Oxbow Recreation Site and Imperial County Palo Verde Park (all near the Colorado River crossing). This alternative may also cause additional visual impacts on residences near the Colorado River crossing and on views from the Colorado River at the crossing.
- **Cultural Resources.** While the area in and around the South of Blythe Alternative has not been subjected to detailed archaeological surveys, the area's sensitivity for cultural resources can be projected from adjacent areas. The southern Palo Verde Valley agricultural lands have little potential for significant resources because of alluviation of sites and extensive agricultural disturbance. However, the alignment would cross about 12 miles of heavily dissected terraces parallel to the Colorado River floodplain. Surveys on the California side, in similar flat mesa settings, have revealed many sites ranging in age from 8,000 years to the late prehistoric period. Site types include cleared circles, rock rings and alignments, chipping stations, quarries, ceremonial geoglyphs, and trails with associated pot drops and artifact scatters. Similar types of sites, in high density, would be predicted for the Arizona side, including crossing through the Ripley Intaglio<sup>10</sup> and two other major intaglio groups.

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<sup>10</sup> An intaglio is a large ground drawing created by removing the pebbles that make up desert pavement. These rock alignments, which are sacred to many Native Americans, are usually in the outline of animals or human-like figures and are mostly found on mesas along the Colorado River.

## C.5.5 Non-Transmission Alternatives

### C.5.5.1 New Conventional Generation

#### *Description*

For the New Conventional Generation Alternative, it is assumed that the most likely method of providing new power generation would be through the construction of combined cycle natural gas-fired turbine power plants. This, however, does not preclude the potential use of alternative energy technologies such as renewable resources, which are discussed in a separate section below. The specific configuration of new generation would vary depending on a number of uncontrollable factors (e.g., need, market forces), but the new facilities would likely be installed in a location with convenient and economical access to fuel supplies, existing transmission facilities, major existing substations, and load centers. Construction and operation of new generation facilities would be subject to separate permitting processes that would need to be completed in advance of construction. Possible locations for new power generation facilities are illustrated on Figure Ap.1-12 (see enclosed CD). For the purposes of this analysis, new generation facilities are assumed to be the following:

- **Near the Devers Substation.** A new power plant could be developed similar to the 456 MW Ocotillo Energy Project, which was proposed by InterGen in May 2001 but never approved for construction, or an expanded generation facility could be installed at the 135 MW Indigo Energy Facility operated by Wildflower LLP near to the Devers Substation.
- **Near the Etiwanda Substation.** Etiwanda is northwest of the Vista Substation. New facilities could be installed at or near the 770 MW Etiwanda Generating Station (currently owned by Reliant Energy) or that facility could be repowered to create a state-of-the-art facility.
- **Near the Valley Substation.** New or expanded generation could occur at the Inland Empire Energy Center, now under construction. The Inland Empire Energy Center was originally proposed by Calpine Corporation in August 2001 and approved for 810 MW in June 2005.

#### *Rationale for Elimination*

**Project Objectives, Purpose, and Need.** The New Conventional Generation Alternative would enhance competition among generating companies supplying energy to California and the power supply within California would be increased. However, new conventional generation would not increase California's transmission import capability from the Southwest, and it would not provide additional transmission infrastructure for energy suppliers selling energy into California energy markets. Therefore, this alternative would not meet all of the stated objectives of the Proposed Project.

Building new generation would not provide the transmission upgrades of the Proposed Project, and as such, building new generation, either conventional or renewable, would not be comparable to an economic transmission line such as Proposed Project. Economic transmission lines provide access to many generators and facilitate a robust transmission system. SCE anticipates that DPV2 would not only allow for interconnection of new generation resources to the transmission grid but also provide for flexible delivery alternatives and increase access to a greater number of power generators. DPV2 also would provide load-serving entities, such as SCE, to procure short-, medium-, and long-term contracts with existing generation. Such flexibility in contracting would probably not be realized under the New Conventional Generation Alternative because new generating plants in southern California would likely require long-term contracts to meet financing requirements to be built and would likely have their full output secured through the contracts. Under this alternative, these generating plants would not be as likely to participate in short-term energy markets and produce the enhanced competition that SCE expects to facilitate with DPV2.

The economics of building new generation outside of California, and especially in the Palo Verde area, have historically been lower relative to new generation in southern California due to the following factors:

- Lower cost of delivered natural gas
- Lower labor rates
- Lower cost for bulk materials purchased locally (including State taxes)
- Lower costs for emissions offsets/credits
- Lower land costs.

These trends will likely continue into the future providing a continued economic incentive for developers of new generation outside of California.

**Feasibility.** Developing new conventional generation in southern California is feasible from a technical standpoint. This has been demonstrated by merchant power plant developers and other public utilities in the region that have successfully developed power plants recently to achieve economic gains.

Investor-owned utilities such as SCE have not recently pursued development of new conventional power plant facilities because of the capital requirements and the financial risk involved. SCE believes it is not in a position to make long-term financial commitments in generation due to uncertainty surrounding the SCE customer base, which could be diminished by direct access and municipalization trends, and the creditworthiness and financial condition of SCE, which were severely damaged in 2000 and 2001 (SCE, 2005a, PEA Appendix G-2, Section III(A)(2)). In addition, SCE could not develop a power plant without first getting CPUC approval on ratemaking, which would create project uncertainty. As such, this alternative is considered to be feasible, but not economically viable with SCE as a developer.<sup>11</sup>

The development of gas-fired power plants in southern California requires compliance with strict air quality regulations, governed by the South Coast AQMD. Mitigation requirements are extensive, requiring purchase of emission offsets and other requirements. However, these requirements have been met by several power plants, so compliance is considered to be feasible.

**Potential Environmental Impacts.** Major power plants require permanent loss of 20 or 30 acres of land, construction of varying length of transmission lines to connect with existing facilities, and construction of pipeline connections for natural gas and water. Construction impacts are generally contained near the plant itself, but operational impacts can be more regional. Air emissions from burning of fossil fuels to generate power occur during the life of the plant, and the plant facilities can be visible from large distances. Depending on technologies used, power plants can consume large amounts of water.

#### C.5.5.2 Renewable Generation Resources

##### *Description*

The principal renewable electricity generation technologies that could serve as alternatives to the Proposed Project and do not burn fossil fuels are geothermal, solar, hydroelectric, wind, and biomass.

**Geothermal.** Geothermal technologies use steam or high-temperature water (HTW) obtained from naturally occurring geothermal reservoirs to drive steam turbine/generators. Geothermal plants must be built at a geothermal reservoir site and typically require about 0.5 acres/MW (600 acres for 1,200 MW). The technology relies on either a vapor dominated resource (dry, super-heated steam) or a liquid-dominated

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<sup>11</sup> There is a power facility currently proposed and under consideration by the California Energy Commission near the Valley Substation: the Sun Valley Power Project. This plant was proposed by a subsidiary of Edison International: Edison Mission Energy. Edison International is a parent company of both SCE and EME.

resource to extract energy from the HTW. Geothermal is a commercially available technology, but it is limited to areas where geologic conditions result in high subsurface temperatures. There are no geothermal resources in the project vicinity, making this technology an infeasible alternative without substantial transmission infrastructure.

**Biomass.** Biomass generation uses a waste vegetation fuel source such as wood chips (the preferred source) or agricultural waste. The fuel is burned to generate steam. Biomass facilities generate substantially greater quantities of air pollutant emissions than natural gas burning facilities, though these emissions may be partially offset by the reduction in emissions from open-field burning of these fields. In addition, biomass plants are typically sized to generate less than 20 MW, which is substantially less than the capacity of the 1,200 MW.

**Solar.** Currently, there are two types of solar generation available: solar thermal power and photovoltaic (PV) power generation.

- Solar thermal power generation uses high temperature solar collectors to convert the sun's radiation into heat energy, which is then used to run steam power systems. Solar thermal is suitable for distributed or centralized generation, but requires far more land than conventional natural gas power plants. Solar parabolic trough systems, for instance, use approximately five acres to generate one megawatt.
- Photovoltaic (PV) power generation uses special semiconductor panels to directly convert sunlight into electricity. Arrays built from the panels can be mounted on the ground or on buildings, where they can also serve as roofing material. Unless PV systems are constructed as integral parts of buildings, the most efficient PV systems require about four acres of ground area per megawatt of generation.

Solar resources would require large land areas in order to meet the project objective to supply 1,200 MW of electricity. While solar generation facilities do not generate problematic air emissions and have relatively low water requirements, there are other potential impacts associated with their use. Construction of solar thermal plants can lead to habitat destruction and visual impacts. PV systems can also have negative visual impacts, especially if ground-mounted. Furthermore, PV installations are highly capital intensive and manufacturing of the panels generates some hazardous wastes.

Both solar thermal and PV facilities generate power during peak usage periods since they collect the sun's radiation during daylight hours. However, even though the use of solar technology may be appropriate for some peaker plants, solar energy technologies cannot provide full-time availability due to the natural intermittent availability of solar resources.

**Wind.** Wind carries kinetic energy that can be utilized to spin the blades of a wind turbine rotor and an electrical generator, which then feeds alternating current (AC) into the utility grid. Most state-of-the-art wind turbines operating today convert 35 to 40 percent of the wind's kinetic energy into electricity. A single 1.5 MW turbine operating at a 40 percent capacity factor generates 2,100 MWh annually. Modern wind turbines represent viable alternatives to large bulk power fossil power plants as well as small-scale distributed systems. Wind turbines being manufactured now have power ratings ranging from 250 watts to 1.8 MW, and units larger than 4 MW in capacity are now under development (AWEA, 2004). The average capacity of wind turbines today is 750 kW. The San Geronio Pass and Tehachapi area are two likely sources of wind energy within SCE's territory.

In open, flat terrain, a utility-scale wind plant would require about 60 acres per MW of installed capacity. However, only 5 percent (3 acres) or less of this area would actually be occupied by turbines, access roads, and other equipment. The remainder could be used for other compatible uses such as farming or ranching. A wind plant located on a ridgeline in hilly terrain will require much less space, as little as two acres per MW (AWEA, 2004).



**Hydroelectric Power.** In order to locate a hydropower project with peaking capability of 100 MW, a significant area of land is required, typically on the order of 1,400 acres, with construction of a storage reservoir constituting the primary land use. While hydropower does not require burning fossil fuels and may be available (e.g., on the Colorado River or a local water resource), this power source can cause significant environmental impacts primarily due to the inundation of many acres of potentially valuable habitat and the interference with fish movements during their life cycles. As a result of these impacts, it is extremely unlikely that new hydropower facilities could be developed and permitted in California within the next several years.

#### ***Rationale for Elimination***

**Project Objectives, Purpose, and Need.** Renewable resources, in particular, tend to rely on dedicated, long-term, full-requirement contracts. SCE has stated that it is not aware of any renewable generation projects in southern California in which only a portion of its full capacity is secured by contract, and the remaining capacity is sold on a merchant basis. Therefore, use of renewable resources would be inconsistent with the objectives of the Proposed Project, which are focused on creating the ability for DPV2 to increase California's transmission import capability from the Southwest and enhance and support the competitive energy market in the Southwest.

SCE stated in the PEA that it specifically considered the solar and wind renewable generation as alternatives to this project. Generation from either technology is categorically "as available" and therefore does not provide the dispatch flexibility that resources delivered via DPV2 can potentially provide. Nevertheless, SCE's evaluation of DPV2 assumes full compliance with California's Renewable Portfolio Standard, in which SCE plans to meet the statutory requirement that 20 percent of its retail energy load be met by renewable generation and a significant portion of this goal is expected to be met through wind and solar generation. Moreover, SCE's future procurement activities will consider additional cost-effective renewable resources that go beyond the 20 percent statutory requirement.

**Feasibility.** As described below, each of the renewable technologies below would not be able to produce 1,200 MW as is required for the DPV2 Project. If several different technologies were combined together, such as development of wind technology in the Tehachapi area, the Stirling Solar Dish and/or the Imperial Valley geothermal reserves, it would be possible to generate more than 1,200 MW of power. However, the permitting and construction of the various projects within the project timeline would be unlikely and each of the projects would still require the construction of transmission lines to bring the power into the Los Angeles area.

**Potential Environmental Impacts.** This alternative has the potential to cause the following environmental impacts. Renewable technology facilities do not generate air emissions like conventional power plants, and they generally have relatively low water requirements. However, there are other potential impacts associated with their use. Construction of solar and geothermal plants and wind turbines can lead to habitat destruction and visual impacts. In addition, all forms of renewable energy would also require the construction of transmission of the point of generation to the load served, which would create similar types of impacts as the Proposed Project.

- **Geothermal.** While geothermal plants produce far fewer emissions than combined-cycle gas plants, geothermal reservoirs contain varying levels of hydrogen sulfide gas (H<sub>2</sub>S), which smells like rotten eggs and can be toxic at high concentrations. The odor can be a nuisance even at very low concentrations during drilling and plant start-up, but is not an issue during normal plant operations. Geothermal plants also emit very low levels of carbon dioxide (CO<sub>2</sub>) and sulfur oxides. Reservoirs with high concentrations of boron have the potential to harm nearby plant life. In addition, mercury and arsenic from a geothermal reservoir can accumulate in scale in plant piping systems in

concentrations high enough to require monitoring, special handling and regulated disposal as hazardous wastes. Binary plants, which have closed cycles, avoid many pollution problems because they have virtually no emissions.

- **Biomass.** Biomass facilities generate substantially greater quantities of air pollutant emissions than natural-gas burning facilities. These emissions vary depending upon the precise fuel and technology used. The collection of biomass fuels can have significant environmental impacts. Harvesting timber and growing agricultural products for fuel requires large volumes to be collected, transported, processed and stored. Biomass fuels may be obtained from supplies of clean, uncontaminated wood that otherwise would be landfilled or from sustainable harvests. On the other hand, the collection, processing and combustion of biomass fuels may cause environmental problems if, for example, the fuel source contains toxic contaminants, agricultural waste handling pollutes local water resources, or burning biomass deprives local ecosystems of nutrients that forest or agricultural waste may otherwise provide.
- **Solar.** While solar generation facilities do not generate air emissions and have relatively low water requirements, there are other potential impacts associated with their use. Construction of solar thermal plants can lead to habitat destruction and visual impacts. PV systems can also have negative visual impacts, especially if ground-mounted. Furthermore, PV installations are highly capital intensive, and manufacturing of the panels generates some hazardous wastes.
- **Wind.** In addition, to the land and transmission lines that would be required for renewable technologies, wind turbines can create other environmental impacts, as summarized below (AWEA, 2004):
  - Erosion can be a concern in certain habitats such as the desert or on mountain ridgelines. Standard engineering practices can be used to reduce erosion potential.
  - Birds collide with wind turbines. Avian deaths have become a concern at Altamont Pass in California, which is an area of extensive wind development and also high year-round raptor use.
  - Wind energy can negatively impact birds and other wildlife by fragmenting habitat, both through installation and operation of wind turbines themselves and through the roads and power lines that may be needed.
  - Bat collisions at wind plants generally tend to be low in number and to involve common species, which are quite numerous. A high number of bat kills at a new wind plant in West Virginia in the fall of 2003 has raised concerns, and the problem of bat mortality at that site is currently under investigation.
  - Visual impacts of wind power fields can be significant, and installation in scenic and high traffic areas often results in strong local opposition.
  - Noise was an issue with some early wind turbine designs, but it has been largely eliminated as a problem through improved engineering and through appropriate use of setbacks from nearby residences. Aerodynamic noise has been reduced by changing the thickness of the blades' trailing edges and by making machines "upwind" rather than "downwind" so that the wind hits the rotor blades first, then the tower (on downwind designs where the wind hits the tower first, its "shadow" can cause a thumping noise each time a blade passes behind the tower). A small amount of noise is generated by the mechanical components of the turbine.
- **Hydroelectric.** Negative aspects of hydroelectric development primarily center around inundation to reaches of stream and riparian lands as a result of dam and reservoir development, that result in permanent changes to the environment. These include creating barriers for fish passage, displacing native plant and animal species, and eliminating whitewater recreation areas. Hydroelectric developments with large water storage components can create the potential for flooding downstream from high

releases during storm events or due to catastrophic dam failures. Construction of new dams and maintenance of old structures must undergo rigorous design analyses that demonstrate the ability to perform safely under the most adverse seismic and flood conditions.

### C.5.5.3 Conservation and Demand-Side Management

#### *Description*

For the past 30 years, while per capita electricity consumption in the United States has increased by nearly 50 percent, California electricity use per capita has been relatively flat. This achievement is the result of continued progress in cost-effective building and appliance standards and ongoing enhancements to efficiency programs implemented by investor-owned utilities (IOUs), customer-owned utilities, and other entities. Since the mid-1970s, California has regularly increased the energy efficiency requirements for new appliances sold and new buildings constructed here. In addition, in a creative and precedent-setting move, the CPUC in the 1980s de-coupled the utilities' financial results from their direct energy sales, facilitating utility support for efficiency programs. These efforts have reduced peak capacity needs by more than 12,000 MW and continue to save about 40,000 gigawatt hours (GWh) per year of electricity (CPUC & CEC, 2005). SCE's 2005 Energy Efficiency Annual Report states that the 2004 results from all of SCE's 2004-2005 energy efficiency programs provided nearly 950 million kilowatt-hours (kWh) of net annualized energy savings, 175 megawatts (MW) of net peak demand reduction, and over \$570 million of resource benefits (SCE, 2005b).

#### *Rationale for Elimination*

**Project Objectives, Purpose, and Need.** The Conservation and Demand-Side Management Alternative would not increase California's transmission import capability from the Southwest and nor would it enhance and support the competitive energy market in the Southwest. Therefore, this alternative would not meet most of the stated objectives of the Proposed Project.

**Feasibility.** Demand response programs are the most promising and cost-effective options for reducing peak demand on California's electricity system. Although the CPUC adopted demand reduction targets for investor-owned utilities in 2003, such as SCE, demand response programs have failed to deliver their savings targets for each of the last three years and appear unlikely to meet their targets for next year (CEC, 2005).

### C.5.5.4 Distributed Generation

#### *Description*

Distributed Generation (DG) is generally considered to be generation, storage, or demand-side management devices, measures, and/or technologies connected to the distribution level of the transportation and distribution grid, usually located at or near the intended place of use. There are many DG technologies, including microturbines, internal combustion engines, combined heat and power (CHP) applications, fuel cells, photovoltaics and other solar energy systems, wind, landfill gas, digester gas and geothermal power generation technologies. Distributed power units may be owned by electric or gas utilities, by industrial, commercial, institutional or residential energy consumers, or by independent energy producers. Distributed generation is the generation of electricity from facilities that are smaller than 50 MW in net generating capacity. Local jurisdictions — cities, counties and air districts — conduct all environmental reviews and issue all required approvals or permits for these facilities. Most DG facilities are very small, for example, a fuel cell can provide power in peak demand periods for a single hotel building.

### ***Rationale for Elimination***

**Project Objectives, Purpose, and Need.** While DG technologies are recognized as important resources to the region's ability to meet its long-term energy needs, DG does not provide a means for SCE to meet its objectives for the project because of the comparatively small capacity of DG systems and the relatively high cost.

In addition, since it is usually located at or near the intended place of use, the DG Alternative would not increase California's transmission import capability from the Southwest and nor would it enhance and support the competitive energy market in the Southwest. Therefore, this alternative would not meet most of the stated objectives of the Proposed Project.

**Feasibility.** Consideration of DG as an alternative to the Proposed Project is not feasible because no single entity has proposed implementing a substantial DG program. Also, a number of serious barriers, including technical issues, business practices, and regulatory policies, make interconnection to the electrical grid in the United States difficult. Broad use of distributed resources would likely require regulatory support and technological improvements. There could be regulatory feasibility issues with the lengthy permitting process. Air permits are generally the first permits sought for DG facilities because air district requirements influence equipment selection. Once the DG equipment has been selected, the land use approval process can begin. Local governments must know what makes and models of equipment will be installed to evaluate potential significant environmental impacts (e.g., noise and aesthetics) and to specify mitigation measures. Building permits are sought last because construction plans must incorporate all project changes required by the local government planning authority to mitigate environmental impacts. This lengthy permitting process would make it impossible to construct this technology within the timeframe of the Proposed Project.

In a January 2002 report on DG the CEC concluded that "DG is capable of providing several Transmission and Distribution (T&D) services, but the extent to which DG can be successfully deployed to effectively supply them are limited by (1) the technical capabilities of various DG technologies; (2) technical requirements imposed by the grid and grid operators; (3) business practices by T&D companies; and (4) regulatory rules and requirements . . . some technical barriers resulting from key characteristics of the prime mover will prevent some DG technologies from providing certain T&D services." Some problems of specific types of distributed generation include the following:

- **Renewable Energy Sources.** As discussed above, the high cost and limited dispatchability of small-scale renewable energy sources such as solar and wind power essentially inhibit their market penetration. In addition, biomass and wind facilities require specific circumstances for siting (i.e., near sources of bio-fuel or in high wind areas), and have their own environmental consequences (e.g., requiring large land areas or resulting in large quantities of air emissions).
- **Fuel Cells.** The present high cost of and small generation capacity of fuel cells precludes their widespread use.
- **Other Fossil-fueled Systems.** Microturbines and various types of engines can also be used for distributed generation; these technologies are advancing quickly, becoming more flexible, and impacts are being reduced. However, they are still fossil-fueled technologies with the potential for significant environmental impacts, including noise. Such systems also have the potential for significant cumulative air quality impacts because individually they are typically small enough to avoid the regulatory requirements for air pollution control. Therefore, use of enough of these systems to constitute an alternative to the Proposed Project would potentially cause significant unmitigated air quality impacts.

**Potential Environmental Impacts.** Potential new impacts created by DG would depend on the type of generation that would be used. Impacts of solar and wind facilities are addressed above. Other types of DG have air quality and noise impacts.

## C.6 No Project Alternative

Both CEQA and NEPA require an evaluation of a No Project or No Action Alternative in order for decision-makers to compare the impacts of approving the project with the impacts of not approving the project. Section C.6.1 describes the issues that affect the No Project Alternative, and Section C.6.2 describes what could occur in the No Project Alternative. The environmental effects of not approving the project are evaluated in each issue area's analysis in Section D.

### C.6.1 Background

Consideration of the No Project Alternative is required by Section 15126.6(e) of the CEQA Guidelines, and NEPA requires the consideration of a No Action Alternative (40 C.F.R. 1502.14(c)). The analysis of the No Project Alternative must discuss the existing conditions at the time the Notice of Preparation was published (October 21, 2005), as well as: "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" [CEQA Guidelines Section 15126.6 (e)(2)]. The requirements also specify that: "If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed" [CEQA Guidelines Section 15126.6 (e)(3)(B)].

The No Action Alternative required under NEPA [40 C.F.R. 1502.14(c)] serves as a basis for comparison even if it would not satisfy the proposed action's purpose and need. The definition of the No Action Alternative depends on the nature of the project and in the case of the proposed DPV2 project the No Action Alternative describes what would occur without the federal agency's (BLM) approval. This EIR/EIS uses the CEQA term No Project Alternative to describe the No Action Alternative required by NEPA.

#### C.6.1.1 Economic Issues Affecting the No Project Alternative

The No Project Alternative has been studied by SCE and the CAISO as part of the economic evaluation of DPV2 (CAISO, 2005). The economic studies demonstrated that there were sufficient economic and transmission system reliability benefits to pursue the Proposed Project over the No Project Alternative. In choosing the Proposed Project over the No Project Alternative, the CAISO showed that although there would be some reliability benefits, substantial economic benefits could occur for California ratepayers with DPV2.

The economic context of the Proposed Project means that DPV2 is primarily driven by SCE's desire to reduce energy costs to California customers, not by a need for improved reliability (see Section A.2). The economic benefits would come mainly from lower energy costs based on the ability to access lower-cost energy supplies in the Southwest, particularly in Arizona. CAISO assumed that the costs of generating capacity would be lower in Arizona than California and that during early years of DPV2 a surplus of generating capacity will be available in Arizona (CAISO, 2005). By creating additional transmission infrastructure to increase the import of low-cost energy, DPV2 would not cause the disconnection or permanent shutdown of any of California's generating capacity, but existing generation in California would be operated for less time throughout the year.

Also, some California generators would be able to reduce their commitments to be available for grid and local area reliability reasons, for example in "reliability-must-run" (RMR) arrangements. This would reduce the level of payments made by SCE through CAISO to these California generators. Under the No Project

Alternative, these economic benefits would not occur, and use of existing generation within California would continue.

#### C.6.1.2 Power Supply Issues Affecting the No Project Alternative

The economic studies done by CAISO for DPV2 show that by generally improving the efficiency of the transmission grid, the power supplied to California customers would come from different generators as a result of the Proposed Project (CAISO, 2005). Reducing generation from older and less efficient power plants in California and increasing generation from higher-efficiency power plants outside of California would provide an air emissions decrease in California, but an emissions increase in Arizona.

The CAISO has estimated that this shift in energy production will result in an approximate net annual reduction of 390 tons of NO<sub>x</sub> emissions in California and Arizona. Emissions of NO<sub>x</sub> within Arizona would increase roughly 200 tons per year, while NO<sub>x</sub> emissions within California would decrease approximately 590 tons per year (Appendix R of CAISO, 2005).<sup>12</sup> The Proposed Project would shift generation so that approximately 450 power plants throughout the western states would be affected. With the Proposed Project, the CAISO model showed that approximately 200 power plants would increase their generation, while 250 plants would decrease as follows:

- Roughly 80 percent of the incremental generation would be produced by 11 plants, with nine of these 11 being in the Palo Verde area, such as Mesquite, Redhawk, and Harquahala.
- Decreased generation would occur at dozens of plants mainly in California. Roughly 80 percent of the decreased generation would occur primarily at less efficient plants such as Ormond Beach, Haynes, and South Bay, and also at newer, more efficient plants such as Mountainview, High Desert, and Palomar.

Under the No Project Alternative, these power supply changes and emission benefits would not occur.

#### C.6.2 No Project Alternative Scenarios

Under the No Project Alternative, construction and operation of DPV2 would not occur. The baseline environmental conditions for the No Project Alternatives are the same as for the Proposed Project. These conditions are described in this EIR/EIS for each environmental discipline as the “environmental baseline” or “setting” in Section D. The baseline conditions would continue to occur into the future, undisturbed, in the absence of project-related construction activities.

The objectives of the Proposed Project would remain unfulfilled under the No Project Alternative. This means that the projected economic benefits of the Proposed Project would not occur, which could result in additional demand-side and supply-side actions becoming more viable. Additional demand response and energy conservation may occur, and supply-side actions could include accelerated development of low-cost generation or other new transmission projects. For example, 1,200 MW of transmission import capability into California would not be added, and the additional market competition and improved system reliability and operating flexibility associated with the Proposed Project would not occur.

No specific development scenario is envisioned, but certain consequences can be identified without undue speculation. The absence of the Proposed Project may lead SCE or other developers to pursue other actions to achieve the objectives of the Proposed Project. The events or actions that are reasonably expected to occur in the foreseeable future without DPV2 include the following:

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<sup>12</sup> CAISO Board Report, Economic Evaluation of the Palo Verde-Devers Line No. 2 (PVD2). Prepared by California ISO, Department of Market Analysis & Grid Planning, February 24, 2005.

- The existing transmission grid and power generating facilities would continue to operate without being reduced until other major generation or transmission projects could be developed.
- Continued growth in electricity consumption and peak demand within California is expected. To serve this growth, additional electricity would need to be internally generated or imported into California by existing facilities. Net air emissions reductions caused by reducing generation from older and less efficient power plants in California and increasing generation from higher-efficiency power plants outside of California would not occur.
- A continuation of baseline *demand-side* or *supply-side* actions may be expected to occur. *Demand-side* actions include additional energy conservation or load management. *Supply-side* actions can include accelerated development of generation, such as conventional, renewable, and distributed generation, or other major transmission projects. These are described in more detail below because they could lead to new adverse environmental effects. Development of other major transmission facilities or new generation triggered by the No Project Alternative would be unpredictable because this varies depending on a number of uncontrollable factors (e.g., energy cost, need, market forces).

#### C.6.2.1 Continuation of Demand-Side Actions

Demand-side management (e.g., conservation) and small-scale, localized generation (i.e., distributed generation or DG) could play an increased role in the SCE service territory under the No Project Alternative. Normally, demand-side management is fully pursued where technically and economically feasible. Under the No Project Alternative, the costs of developing DPV2 could be diverted to subsidize or improve the economic feasibility of some demand-side projects, although 1,200 MW of peak load reduction would not be achievable for the cost of DPV2. Because reductions in the cost of energy supplies enabled by DPV2 would not occur, the access to low-cost energy provided by DPV2 would not occur and the enhanced competition among generating companies would not occur. This means that under the No Project Alternative, a greater level of demand-side control could become economically feasible.

##### ***Demand-Side Management and Conservation***

Demand-side management (DSM) programs are described in more detail in Appendix I (Alternatives Screening Report). DSM programs reduce customer energy consumption and overall electricity use. Some programs attempt to shift energy use to off-peak periods, which allows generators to operate more steadily over the course of a day. DSM programs and peak-shifting do normally involve any noteworthy construction activities.

The CPUC supervises various demand-side management programs administered by the regulated utilities, and many municipal electric utilities have their own demand-side management programs. The combination of these programs constitutes the most ambitious overall approach to reducing electricity demand administered by any state in the nation. As such, reducing demand is an essential part of SCE's operations with or without the Proposed Project. Under the No Project Alternative, continuation of the current relatively high cost of energy may likely lead to increased conservation.

##### ***Distributed Generation***

According to the California Energy Commission, distributed generation (DG) is the widespread generation of electricity from facilities that are smaller than 50 MW in net generating capacity. Most DG facilities are very small, for example, a fuel cell could provide power in peak demand periods for a single hotel building. More than 2,000 MW of DG are in place across California. Small business and retail customers of electricity normally install these systems to offset the power drawn from a utility such as SCE. Over the next ten years, the CPUC aims to provide incentives for up to 3,000 MW of new distributed generation State-

wide, for customers who wish to install new “clean” onsite DG up to 1 MW (Self-Generation Incentive Program). DG is also described in more detail in Appendix 1 (Alternatives Screening Report).

Under the No Project Alternative, the continued relatively high cost of energy delivered to the SCE service territory may provide increased incentive for development of DG units by industrial, commercial, institutional, or residential energy consumers. There are many available DG technologies, including micro-turbines, internal combustion engines, combined heat and power (CHP) applications, fuel cells, photovoltaics, and other solar energy systems, wind, landfill gas, digester gas and geothermal power generation technologies. Local jurisdictions such as cities, counties, and air districts, would need to conduct environmental reviews and issue required approvals or permits for these facilities.

#### C.6.2.2 Continuation of Supply-Side Actions

Providing new power supply to meet California’s growing demand occasionally involves development of generation, such as conventional, renewable, and distributed generation, or other major transmission projects. No new generation or major transmission facilities would be required if the DPV2 project is not constructed. The No Project Alternative could, however, accelerate development of alternate facilities.

The specific configuration of alternate facilities would vary depending on a number of uncontrollable factors (e.g., energy cost, need, market forces). Since the primary objectives of DPV2 are economic, new alternate facilities under any scenario would need to be economically competitive for developers to pursue. Such new facilities would probably be installed in locations with convenient and economical access to fuel supplies, existing transmission facilities, and load centers. Construction and operation of new generation and transmission projects would be subject to separate permitting processes that would need to be completed in the future. Because the Proposed Project has been a subject of the planning and permitting processes for many years, it is doubtful that any major new generation or transmission projects would be able to come online any earlier than the expected DPV2 in service date.

Any combination of the following three supply-side scenarios could occur as part of the No Project Alternative:

- **Unchanged or Increased Dependence on Existing Generation in California.** Existing generation located in California may continue to run or run more frequently, which would cause greater use of older and more inefficient power plants, forfeiting the economic benefits of the Proposed Project. Continuing the dependence on existing generation would perpetuate and exacerbate “reliability-must-run” payments to generators in California, and it may cause certain power plant retirements to be postponed.<sup>13</sup> However, opportunities to develop or refurbish existing power plants near the load centers of southern California are limited, and there are lengthy timelines associated with planning, siting, and permitting major new generation or transmission facilities. As a result, this scenario is most likely to occur under the No Project Alternative.
- **Accelerated Development of Other Major Transmission Projects or Upgrades.** Other major transmission projects and upgrades may be built to achieve objectives similar to those of the Proposed Project. In its work with the Southwest Transmission Expansion Plan (STEP), the CAISO studied a number of other options that would increase the import capability into Southern California. The plan for DPV2 was established as preferable out of many far-reaching transmission alternatives that were

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<sup>13</sup> The STEP process that established the plan for the DPV2 project assumed that the following units would be retired prior to 2008: San Bernardino 1 and 2 (125 MW), Mohave 1 and 2 (1580 MW), Etiwanda 1, 2, and 3 (391 MW), and El Segundo 1 and 2 (350 MW).



studied by STEP.<sup>14</sup> No alternative transmission projects were found to yield the same level of cost benefit as the Proposed Project. In order to be an alternative to DPV2, a project would need to find a sponsor and undergo the planning and permitting processes, and it would be unlikely for any project sponsor to bring an alternative project online in time to meet the expected DPV2 in-service date. As such, no predictable transmission development scenario that can be reasonably expected to occur as part of the No Project Alternative.

- **Accelerated Development of New Generation in California or Elsewhere.** New, relatively efficient generation may be built in California to replace existing less efficient generation. With or without the Proposed Project, new facilities could be developed depending on the economic decisions made by project sponsors. Regardless of sponsor, planning, permitting, and construction of new generation facilities as an alternative to DPV2 would be unlikely to occur before the expected DPV2 in-service date. Because no project sponsors have been identified for a generation alternative, there is no predictable generation development scenario that can be reasonably expected to occur as part of the No Project Alternative. The discussion of "New Conventional Generation" as a project alternative is provided in Appendix 1 (Alternatives Screening Report).

If the Proposed Project is not approved or not constructed, project sponsors of alternate facilities would need to re-evaluate the prevailing economic conditions to determine the viability of alternate transmission or generation projects. SCE or other sponsors would need to develop alternative plans to achieve the largely economic objectives of the Proposed Project. Although development of alternative projects could be accelerated, for analysis of the No Project Alternative, NEPA and CEQA require consideration of what can be reasonably expected to occur in the foreseeable future, based on current plans. Without alternative plans or sponsors for alternate facilities, it would be speculative to assume that any specific transmission or generation projects are foreseeable under the No Project Alternative.

## C.7 References

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# Appendix 1. Alternatives Screening Report

## 1. Introduction

### 1.1 Purpose of Report

On April 11, 2005, Southern California Edison (SCE) submitted Application A.05-04-015 seeking authorization by the California Public Utilities Commission (CPUC) for a Certificate of Public Convenience and Necessity (CPCN) for the Devers-Palo Verde 500 kV No. 2 (DPV2) Transmission Line Project (Proposed Project). Because the proposed transmission line would cross approximately 110.5 miles of federal land managed by the Bureau of Land Management (BLM), the project would also require a Right-of-Way (ROW) Grant from the BLM for the portion of the project across BLM land. The Proposed Project is described in detail in Section B of the EIR/EIS. This document describes the alternatives screening analysis that has been conducted for the Proposed Project, supplementing the information presented in Sections C of the EIR/EIS.

Alternatives to the Proposed Project were suggested by SCE as part of the Proponent's Environmental Assessment (PEA), by the EIR/EIS team based on identification of potentially significant environmental impacts, in past environmental documents in the proposed corridor, and during the scoping period (October 25 to November 28, 2005, and December 7, 2005 to January 20, 2006) by public agencies and the general public. The alternatives screening analysis was completed in order to determine the range of alternatives that would be carried forward in the EIR/EIS. This report documents: (1) the range of alternatives that have been suggested and evaluated; (2) the approach and methods used by the CPUC and BLM in screening the feasibility of these alternatives according to guidelines established under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA); and (3) the results of the alternatives screening process (i.e., which alternatives are analyzed in the EIR/EIS).

The Alternatives Screening Report is incorporated as Appendix 1 to the EIR/EIS, providing the basis and rationale for whether an alternative has been carried forward to full evaluation in the EIR/EIS. For each alternative that was eliminated from further consideration, this document explains in detail the rationale for elimination. Since full consideration of the No Project Alternative is required by CEQA and NEPA, this report does not address this alternative (it is defined in Section C.6 of the EIR/EIS).

### 1.2 Background

#### 1.2.1 Background and Previous Documents

The proposed route for the Devers-Harquahala portion of the Proposed Project is located generally parallel to SCE's existing Devers-Palo Verde 500 kV No. 1 (DPV1) transmission line route. Electrical systems and siting studies were conducted prior to construction of the DPV1 line. A regional siting study was conducted by SCE in 1976-1977 to identify alternative routes between Devers Substation and the Palo Verde Nuclear Generating Station (PVNGS) within a 6,000-square-mile area. Several alternative routes were evaluated in the DPV1 Draft Environmental Impact Statement (DEIS) prepared by the U.S. Department of the Interior, Bureau of Land Management (BLM) and Nuclear Regulator Commission (NRC) (BLM and NRC, July 1978). These agencies selected the preferred route for the DPV1 transmission

line that was constructed in 1982 following State approvals by the CPUC and the Arizona Corporation Commission (ACC).

After construction of the DPV1 line, applications to construct the DPV2 line between Devers Substation and PVNGS were submitted by SCE in 1985. The CPCN application and PEA included the proposed route and four alternative routes that were also considered in the DPV1 studies that were completed in 1978. DPV2 was approved by the CPUC and the BLM in 1988 and 1989, but SCE decided not to construct it at that time.

The alternatives screening process for this EIR/EIS included consideration of all alternatives from the following documents (in chronological order):

**Devers–Palo Verde 500 kV Transmission Line Project**

- Devers–Palo Verde 500 kV Transmission Line: Environmental Report (1978)
- Palo Verde–Devers 500 kV Transmission Line: Final Environmental Statement (1979, February)
- Devers–Palo Verde 500 kV Transmission Line: Final Environmental Impact Report (1979, April)

**Devers–Palo Verde 500 kV No. 2 Transmission Line Project**

- Devers–Palo Verde #2 500 kV Transmission Line Project: Engineering Report (1987, January)
- Devers–Palo Verde #2 500 kV Transmission Line Project: Draft Environmental Impact Report, Volume I Project Specific Analysis (1987, March) and Volume II Engineering and Environmental Assessment of Transmission Line Planning Issues for the Southern California Transmission System (1987, March)
- Second Devers to Palo Verde 500 kV AC Transmission Line: Final Need and Alternatives Report, Volume II: Appendices (1987, April)
- Devers–Palo Verde No. 2 500 kV Transmission Line Project: Supplemental Draft Environmental Impact Statement (1987, May)
- Devers–Palo Verde No. 2 500 kV Transmission Line Project: Final Environmental Impact Report, Volume 1 and Volume 2 (1987, August)
- Devers–Palo Verde #2 500 kV Transmission Line Project: Amended Proponent's Environmental Assessment (1988, August)
- Second Devers to Palo Verde 500 kV AC Transmission Line: Second Supplemental Report on Need and Alternatives (1988, September)
- Devers–Palo Verde No. 2 500 kV Transmission Line Project: Addendum to the Final Environmental Impact Statement (1988, September)
- Devers–Palo Verde No. 2 500 kV Transmission Line Project: Final Supplemental Environmental Impact Statement (1988, October)
- Devers–Palo Verde 500 kV No. 2 Transmission Line Project: Proponent's Environmental Assessment (2005, April)

This EIR/EIS also included consideration of the alternatives addressed in two other environmental documents for transmission lines near the DPV2 corridor:

- Desert Southwest Transmission Line Project (DSWTP): Final EIS/EIR (2005, October)

- Blythe Energy Project Transmission Line Modifications (BEPTL): Petition for Post-Certification Amendment (2004, October) and CEC Revised Staff Assessment/Draft Environmental Assessment (September, 2006).

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### 1.3 Summary of the Proposed Project

The Proposed Project is described in detail in Section B of this EIR/EIS and has two major components: the new 500 kV portion between Devers Substation and the Harquahala Generating Station (referred to as "Devers-Harquahala" or D-H), and the 230 kV upgrade segment west of the SCE Devers Substation (referred to as "West of Devers" or WOD). In addition, there are system upgrades that would occur in certain locations. Each of these components is described below.

#### 1.3.1 Devers-Harquahala

The 230-mile 500 kV portion of the Proposed Project includes the following components:

- Construction of a 500 kV transmission line between the Harquahala Generating Station Switchyard, located near the Palo Verde Nuclear Generating Station (PVNGS) west of Phoenix, Arizona and SCE's Devers Substation (Devers) located near Palm Springs, California
- Construction of the Midpoint Substation adjacent to the proposed Devers-Harquahala 500 kV transmission line located about 10 miles southwest of Blythe, California (this is an optional component of the Proposed Project that SCE may or may not construct, depending on whether a connection is needed for the Desert Southwest Transmission Project or Blythe-area generators)
- Construction of a new optical repeater facility located 3 miles west of Blythe, California, within the DPV2 ROW
- Construction of two new series capacitor banks, each adjacent to an existing DPV1 series capacitor bank: one in Arizona approximately 55 miles west of the Harquahala Switchyard and one in California located 64 miles east of Devers and 0.4 miles south of I-10
- Installation of a dead-end structure, circuit breakers, and disconnect switches at the Harquahala Switchyard
- Construction and installation of related telecommunication systems, including a new telecommunication facility on Harquahala Mountain and a new Optical Ground Wire (OPGW) on the Devers-Harquahala transmission line structures

#### 1.3.2 West of Devers

This segment of the Proposed Project requires the upgrading of four existing 230 kV circuits. Specifically, this would include:

- Replacement of two existing 40-mile 230 kV single-circuit transmission lines with a new 40-mile double-circuit 230 kV transmission line
- Reconductoring of 40 miles of a double-circuit 230 kV transmission line between Devers Substation and San Bernardino Junction located in San Bernardino County, California (including replacement of 415 towers for all the proposed West of Devers upgrades)
- Replacement of 4.8 miles of 230 kV transmission line between San Bernardino Junction and Vista Substation, also located in San Bernardino County, California (reconductoring only)

- Replacement of 3.4 miles of 230 kV transmission line between San Bernardino Junction and San Bernardino Substation located in San Bernardino County, California (reconductoring only).

### 1.3.3 System Improvements

The following improvements would also be required in order to implement the Proposed Project:

- Upgrade of a 500 kV shunt line reactor bank and associated disconnect switches within Devers Substation
- Upgrade of Special Protection Scheme (SPS) relays at the Devers, Padua,<sup>1</sup> and Vista Substations in California, and the PVNGS, Hassayampa, and Harquahala Switchyards in Arizona.

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<sup>1</sup> Padua Substation is a 230 kV substation owned and operated by SCE in San Bernardino County, northwest of Etiwanda.

## 2. Overview of Alternatives Evaluation Process

The range of alternatives in this report was identified through the CEQA/NEPA scoping process, and through supplemental studies and consultations that were conducted during the course of this analysis. The range of alternatives considered in the screening analysis encompasses:

- Alternatives identified by SCE ;
- Alternatives identified in past DPV1 and DPV2 documents;
- Alternatives identified during the public scoping process that was held in accordance with CEQA and NEPA requirements; and
- Alternatives identified by the EIR/EIS team as a result of the independent review of the Proposed Project impacts and meetings with affected agencies and interested parties.

### 2.1 Alternatives Screening Methodology

The evaluation of the alternatives used a screening process that consisted of three steps:

- Step 1:** Clearly define each alternative to allow comparative evaluation
- Step 2:** Evaluate each alternative in comparison with the Proposed Project, using CEQA/NEPA criteria (defined below)
- Step 3:** Based on the results of Step 2, determine the suitability of the each alternative for full analysis in the EIR/EIS. If the alternative is unsuitable, eliminate it from further consideration.

### 2.2 CEQA and NEPA Requirements for Alternatives

After completion of the steps defined above, the advantages and disadvantages of the alternatives are carefully weighed with respect to CEQA and NEPA criteria for consideration of alternatives. Both CEQA and NEPA provide guidance on selecting a reasonable range of alternatives for evaluation in an EIR and EIS, and the requirements are similar. This alternatives screening and evaluation process satisfies both State and federal requirements. The CEQA and NEPA requirements for selection of alternatives are described below.

#### 2.2.1 CEQA

An important aspect of EIR preparation is the identification and assessment of reasonable alternatives that have the potential for avoiding or minimizing the impacts of a Proposed Project. In addition to mandating consideration of the No Project Alternative, the State CEQA Guidelines (Section 15126.6(e)) emphasize the selection of a reasonable range of feasible alternatives and adequate assessment of these alternatives to allow for a comparative analysis for consideration by decisionmakers. The State CEQA Guidelines (Section 15126.6(a)) state that:

*An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid*

*or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation.*

In order to comply with CEQA's requirements, each alternative that has been suggested or developed for this project has been evaluated in three ways:

- Does the alternative accomplish all or most of the basic project objectives?
- Is the alternative feasible (from economic, environmental, legal, social, technological standpoints)?
- Does the alternative avoid or substantially lessen any significant effects of the Proposed Project (including consideration of whether the alternative itself could create significant effects potentially greater than those of the Proposed Project)?

Each of these bullets is described in more detail in the following sections.

### 2.2.1.1 Consistency with Project Objectives

The State CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives" (Section 16126.6(b)). Therefore, it is not required that each alternative meet all of SCE's objectives. In its Proponent's Environmental Assessment (PEA), SCE has identified the following four objectives for the Proposed Project:

- **Increase California's Transmission Import Capability.** According to SCE, DPV2 will increase California's transmission import capability by 1,200 MW providing greater access to sources of low-cost energy currently operating in the Southwest. The Southwest region currently has over 6,000 MW of surplus generation, some of which may be imported into California. The Southwest Transmission Expansion Planning (STEP) working group independently concluded a similar magnitude of generation is available for import into California. Increased access to energy in the Southwest is forecasted to lower total energy costs and substantially benefit California consumers. SCE's economic analysis concluded that DPV2 provides \$1.1 billion of benefits to California consumers over the life of the project, and has a benefit-to-cost ratio of 1.7:1.
- **Enhance the Competitive Energy Market.** SCE states that it believes it is in California's interest to encourage investment in new generation infrastructure through the construction of needed high-voltage transmission lines. This is consistent with the *Energy Action Plan II*, which was adopted in September 2005 by the CPUC and the California Energy Commission for California (CPUC & CEC, 2005). Transmission infrastructure is necessary for a competitive market, and is vital to integrating new generation additions (CPUC, 2004). SCE states that DPV2 is expected to enhance competition amongst energy suppliers by increasing access to the California energy market, providing siting incentives for future energy suppliers, and providing additional import capability. Facilitating a competitive energy market in the Southwest may also create employment opportunities, which are beneficial to the economy and industries in Arizona and California.
- **Support the Energy Market in the Southwest.** The Western Electricity Coordinating Council (WECC) transmission system is an interstate regional system (including Northwestern Mexico and Western Canadian provinces) that links power generation resources with customer loads in a complex electrical network. DPV2 will expand this network and increase the ability for California and the Southwest to pool resources for ancillary services, and provide emergency support in the event of generating unit outages or natural disasters.



- **Provide Increased Reliability, Insurance Value, and Operating Flexibility.** DPV2 would improve the reliability of the regional transmission system, providing insurance against major outages such as the loss of a major generating facility or of another high-voltage transmission line.

The CAISO conducted an independent review of DPV2 and also found the DPV2 project to be a necessary and cost-effective addition to the CAISO controlled grid.<sup>2</sup> The CAISO Board approved the DPV2 project on February 24, 2005 and directed SCE to proceed with the permitting and construction of the transmission project, preferably to be completed by the summer of 2009. However, because the project is designed to provide economic benefits and it is not primarily a reliability enhancement project, SCE did not present a specific project objective related to the date of project operation.

### 2.2.1.2 Feasibility

The State CEQA Guidelines (Section 15364) define feasibility as:

*... capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.*

The alternatives screening analysis is largely governed by what CEQA terms the “rule of reason,” meaning that the analysis should remain focused, not on every possible eventuality, but rather on the alternatives necessary to permit a reasoned choice. Furthermore, of the alternatives identified, the EIR is expected to fully analyze those alternatives that are feasible, while still meeting most of the project objectives.

According to the State CEQA Guidelines (Section 15126.6(f)(1)), among the factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and proponent’s control over alternative sites in determining the range of alternatives to be evaluated in the EIR. For the screening analysis, the feasibility of potential alternatives was assessed taking the following factors into consideration:

- **Economic Feasibility.** Is the alternative so costly that implementation would be prohibitive? The State CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of project objectives or would be more costly” (Guidelines Section 16126.6(b)). The Court of Appeals added in *Goleta Valley v. Board of Supervisors* (2nd Dist. 1988) 197 Cal.App.3d, p. 1181 (see also *Kings County Farm Bureau v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 736 [270 Cal. Rptr. 650]): “[t]he fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are *sufficiently severe* as to render it *impractical* to proceed with project.”
- **Environmental Feasibility.** Would implementation of the alternative cause substantially greater environmental damage than the proposed Project, thereby making the alternative clearly inferior from an environmental standpoint? This issue is primarily addressed in terms of the alternative’s potential to eliminate significant effects of the Proposed Project, as discussed in Section 2.2.1.3 below.
- **Legal Feasibility.** Does the alternative have the potential to avoid lands that have legal protection that may prohibit or substantially limit the feasibility of permitting a high voltage transmission line?

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<sup>2</sup> <http://www.caiso.com/docs/09003a6080/34/e4/09003a608034e440.pdf>.

- **Regulatory Feasibility.** Do regulatory restrictions substantially limit the likelihood of successful permitting of a high-voltage transmission line? Is the alternative consistent with regulatory standards for transmission system design, operation, and maintenance?

Lands that are afforded legal protections that would prohibit the construction of the project, or require an act of Congress for permitting, are considered less feasible locations for the project. These land use designations include wilderness areas, wilderness study areas, restricted military bases, airports and Indian reservations. Information on potential legal constraints of each alternative has been compiled from laws, regulations, and local jurisdictions, as well as a review of federal, State, and local agency land management plans and policies.

- **Social Feasibility.** Would the alternative cause significant damage to the socioeconomic structure of the community and be inconsistent with important community values and needs? Similar to the environmental feasibility addressed above, this subject is primarily considered in consideration of significant environmental effects.
- **Technical Feasibility.** Is the alternative feasible from a technological perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?

### 2.2.1.3 Potential to Eliminate Significant Environmental Effects

A key CEQA requirement for an alternative is that it must have the potential to "avoid or substantially lessen any of the significant effects of the project" (State CEQA Guidelines Section 16126.6(a)). If an alternative is identified that clearly does not have the potential to provide an overall environmental advantage as compared to the Proposed Project, it is usually eliminated from further consideration. At the screening stage, it is not possible to evaluate all of the impacts of the alternatives in comparison to the Proposed Project with absolute certainty, nor is it possible to quantify impacts. However, it is possible to identify elements of an alternative that are likely to be the sources of impact and to relate them, to the extent possible, to general conditions in the subject area.

Table Ap.1-1 presents a summary of the potential significant effects of the Proposed Project. This impact summary was prepared for the Notice of Preparation/Notice of Intent prior to completion of the EIR/EIS analysis, so it may not be complete in comparison to the detailed analysis that will be included in the EIR/EIS. The impacts stated below are based on a preliminary assessment of potential project impacts and were used to determine whether an alternative met the CEQA requirement to reduce or avoid potentially significant effects of the Proposed Project.

**Table Ap.1-1. Summary of Potential Issues or Impacts**

Environmental Issue Area	Potential Issues or Impacts
<b>Aesthetics / Visual</b>	<ul style="list-style-type: none"> <li>• Visual impacts would occur to sensitive viewpoints from which the proposed transmission line or upgrades would be visible, including: residences, park and recreation areas, and travel routes and highways.</li> <li>• Potential visual impacts of short duration to roadway viewers located where the proposed transmission line crosses or runs parallel to roadways (some of which are designated "scenic").</li> <li>• Impacts to scenic quality would occur in areas of Class A scenery and where construction and operation of DPV2 would result in strong contrast with the natural setting.</li> </ul>
<b>Agricultural Resources</b>	<ul style="list-style-type: none"> <li>• Potential impacts from the removal of cropland from production, interference with tilling and irrigation patterns, and/or potential conflict with agricultural aviators (crop dusters), and restrict agricultural vehicular access.</li> <li>• Possible impacts on zoning for agricultural use, Williamson Act contracts, or conversion of farmland to non-agricultural use.</li> </ul>

**Table Ap.1-1. Summary of Potential Issues or Impacts**

<b>Environmental Issue Area</b>	<b>Potential Issues or Impacts</b>
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• Construction dust and equipment emissions violating ambient air quality standards for the South Coast Air Quality Management District (SCAQMD) and the Mojave Desert Air Quality Management District (MDAQMD).</li> <li>• Impacts from heavy equipment, support vehicles, and internal combustion equipment or ground clearing or grading create fugitive dust and/or generate exhaust containing: carbon monoxide (CO), reactive organic compounds (ROC), nitrogen oxide (NOx), sulfur oxides (SOx), and particulate matter (PM10).</li> <li>• Potential ongoing impacts from the production of ozone due to corona discharge at the hardware/insulator assemblies.</li> <li>• Potential air quality benefits by reducing use of less efficient power plants in California and increasing use of more efficient power plants in Arizona.</li> </ul>
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>• Possible impacts to three types of areas designated for habitat protection: Kofa National Wildlife Refuge, three BLM Areas of Critical Environmental Concern (Chuckwalla Valley Dune Thicket, Alligator Rock, and Coachella Valley Fringe-toed Lizard), and the Coachella Valley NWR and Preserve.</li> <li>• In the proposed corridor for DPV2 in California and Arizona, direct and temporary impacts from construction would affect vegetation, including federally listed plant species.</li> <li>• Impacts from an increase in non-native weed establishment and recruitment, particularly at tower sites, crane pads, material stockpile yards, and concrete batch plant sites.</li> <li>• Potential direct, permanent impacts to sensitive wildlife (e.g., bighorn sheep, desert tortoise, etc.), bird, and/or mammal species during construction, operations, and maintenance procedures.</li> <li>• Potential direct, permanent impacts to birds nesting in cacti, shrubs, trees, or on the ground, if their nests are destroyed.</li> <li>• Potential ongoing impacts to bird and bat species, which may collide with conductors or static lines during flight.</li> </ul>
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>• Construction disturbance to recorded and/or unknown cultural and historic resources</li> <li>• Potential cultural impacts to Edom Hill in California, which forms the northwestern end of the Indio Hills and is considered sacred to the Agua Caliente Indian Tribe.</li> <li>• Potential ethnographic impacts where the WOD crosses the Morongo Indian Reservation.</li> <li>• Potential impacts to paleontological resources during excavation of tower footings and grading of access spur roads on the transmission line corridor or upgrades WOD.</li> </ul>
<b>Geology and Soils</b>	<ul style="list-style-type: none"> <li>• Potential impacts from grading access roads, spur roads, and tower pads within the utility ROW.</li> <li>• Potential impacts through soil compaction along new spur roads in soft fluvent soils, which would create localized shallow depressions of the ground surface.</li> <li>• Potential impacts to desert pavement, which is considered a unique geologic feature, from the installment and use of spur roads and tower pads.</li> <li>• Potential impacts from seismic activity in the Banning Fault and the Mission Creek fault, which are known to be active, as well as the Mecca hills Fault, which is potentially active.</li> <li>• Possible impacts from groundshaking, landslides, mudslides, or other related ground failures from seismic activity, particularly where the proposed transmission line would cross active fault lines.</li> </ul>
<b>Hazards and Hazardous Materials</b>	<ul style="list-style-type: none"> <li>• Potential impacts from the improper storage or handling of hazardous materials and/or hazardous wastes during project construction, operations, or maintenance.</li> <li>• Potential impacts from the leaking or spilling of petroleum or hydraulic fluids from construction equipment or other vehicles during project construction, operation, or maintenance.</li> <li>• Potential impacts from the inadvertent uncovering of hazardous materials during excavation activities, causing toxic releases to the environment.</li> </ul>
<b>Hydrology and Water Quality</b>	<ul style="list-style-type: none"> <li>• Possible impacts from increased surface water runoff, erosion, siltation, and sedimentation.</li> <li>• Possible impacts to streams or washes from violation of water quality standards or waste discharge requirements.</li> </ul>

Table Ap.1-1. Summary of Potential Issues or Impacts

Environmental Issue Area	Potential Issues or Impacts
Land Use	<ul style="list-style-type: none"> <li>• Possible conflicts with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.</li> <li>• Impacts would occur from the removal of dwelling units or where the proposed transmission line would be located nearby to residences, mobile homes, or other sensitive receptors.</li> <li>• Potential impacts that may impede mining or other business operations.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• During construction, impacts from noise generated by equipment operation. Volume range would be 80 to 100 dBA at a range of 50 feet from the active construction site.</li> <li>• During operation of proposed transmission line, potential impacts from noise generated during the operation of the proposed transmission line, which would increase ambient noise levels surrounding the corridor.</li> </ul>
Socioeconomics	<ul style="list-style-type: none"> <li>• Potential impacts from the employment of 205 construction personnel during construction.</li> <li>• Potential impacts from the possible influx of construction labor, if housing is required.</li> <li>• Potential positive fiscal impacts in property-taxing jurisdictions, which would receive tax revenues from the proposed transmission line.</li> <li>• Potential for project impacts to disproportionately affect low-income or minority populations.</li> </ul>
Public Services and Utilities	<ul style="list-style-type: none"> <li>• Possible impacts during construction activities from increased usage of public resources, services, and utilities.</li> <li>• Possible impacts during construction activities from increased generation of waste and disposal needs.</li> </ul>
Recreational Resources and Wilderness Areas	<ul style="list-style-type: none"> <li>• Possible impacts upon established or pending conservation plans.</li> <li>• During construction, potential impacts to recreational land uses where the proposed transmission line would cross the Colorado River, Kofa National Wildlife Refuge in the Crystal Hill-Coyote Peak Exclusion, three BLM Areas of Critical Environmental Concern (Chuckwalla Valley Dune Thicket, Alligator Rock, and Coachella Valley Fringe-toed Lizard), a California State Park (Indio Hills Palms), and the Coachella Valley NWR and Preserve.</li> <li>• Impacts during construction for the 230 kV Upgrades WOD would result in a temporary disruption of recreational activities and occur in the following recreational areas: Noble Creek Regional Park, Oak Valley Golf Course, and the Pacific Crest Trail.</li> <li>• Potential impacts from road closures and increased traffic during construction activities, which may impede access to recreational areas.</li> </ul>
Transportation and Traffic	<ul style="list-style-type: none"> <li>• Potential impacts from road closures during construction activities, which may impede access to areas along the transmission line corridor, including impediment of access for fire fighting and police response.</li> <li>• Potential impacts from increased traffic during construction, operation and maintenance of the proposed transmission line.</li> </ul>
Other Issues	<ul style="list-style-type: none"> <li>• Cumulative Impacts (including other proposed transmission lines in or near the DPV2 corridor)</li> <li>• Growth-Inducing Effects</li> </ul>

## 2.2.2 NEPA

According to the Council on Environmental Quality's (CEQ) NEPA Regulations (40 C.F.R. 1502.14), an EIS must present the environmental impacts of the proposed action and alternatives in comparative form, defining the issues and providing a clear basis for choice by decisionmakers and the public. The alternatives section shall:

- Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.

- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.
- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

The CEQ has stated that "[r]easonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the applicant" (CEQ, 1983).

In addition to the CEQ NEPA regulations, CEQ has issued a variety of general guidance memoranda and reports that concern the implementation of NEPA. One of the most frequently cited resources for NEPA practice is CEQ's *Forty Most Asked Questions Concerning CEQ's NEPA Regulations* (Forty Questions). Although a reviewing federal court does not always give the Forty Questions the same deference as it does the CEQ NEPA Regulations, in some situations the Forty Questions have been persuasive to the judiciary. For example in one decision, a federal court relied heavily on one of the Forty Questions in interpreting the treatment of alternatives under NEPA [*American Rivers et al. v. Federal Energy Regulatory Commission*, 187 F.3d 1007 (9th Cir. 1999)] (Bass et al., 2001).

In general, alternatives are discussed in Forty Questions Nos. 1 through 7. Question No. 5b asks if the analysis of the "proposed action" in an EIS is to be treated differently than the analysis of alternatives. The response states:

*The degree of analysis devoted to each alternative in the EIS is to be substantially similar to that devoted to the "proposed action." Section 1502.14 is titled "Alternatives, including the proposed action" to reflect such comparable treatment. Section 1502.14(b) specifically requires "substantial treatment" in the EIS of each alternative including the proposed action. This regulation does not dictate an amount of information to be provided but rather, prescribes a level of treatment, which may in turn require varying amounts of information, to enable a reviewer to evaluate and compare alternatives.*

#### 2.2.2.1 Consistency with Purpose and Need

CEQ NEPA Regulations (40 C.F.R. 1502.13) require a statement "briefly specifying the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." In addition to the project objectives defined in Section 2.2.1 above, SCE's PEA presents the following statement regarding the purpose and need for the DPV2 project:

*Californians have learned from painful experience during the 2000-2001 electricity crisis that the market for electricity in California is susceptible to volatile commodity prices, the exercise of market power, and the risk of supply shortages. Development of new transmission facilities to gain greater access to generation may help California avoid or limit similar experiences. Additionally, development of new transmission facilities to areas where generation has been more easily sited and constructed may spur development of new competitive generation to provide further insurance against future electricity crises.*

### 2.2.2.2 Feasibility

The environmental consequences of the alternatives, including the proposed action, are to be discussed in the EIR/EIS in accordance with CEQ NEPA Regulations (40 C.F.R. 1502.16). The discussion shall include "Possible conflicts between the proposed action and the objectives of federal, regional, State, and local land use plans, policies and controls for the area concerned." Other feasibility factors to be considered may include cost, logistics, technology, and social, environmental, and legal factors (Bass et al., 2001). The feasibility factors are substantially the same as described for CEQA in Section 2.2.1.2, above.

### 2.2.3 Summary of CEQA and NEPA Screening Methodology

Unlike CEQA's requirements, NEPA does not require screening of alternatives based on their potential to avoid or lessen significant environmental effects. However, to assure that the alternatives considered in the EIR/EIS would meet the requirements of both CEQA and NEPA, the stricter requirements of CEQA have been applied as the screening methodology. As such, a reasonable range of alternatives has been considered and evaluated as to whether or not the alternatives meet (1) most of the project objectives/purpose and need, (2) are considered feasible, and (3) would avoid or substantially lessen any significant effects of the Proposed Project.

### 2.2.4 Other Considerations for Alternatives

The final project decision by the CPUC will be guided by the Public Utilities Code in addition to the requirements of CEQA. The Public Utilities Code in Section 1002 states that:

*Section 1002. (a) The commission, as a basis for granting any certificate pursuant to Section 1001 shall give consideration to the following factors:*

*(1) Community values.*

*(2) Recreational and park areas.*

*(3) Historical and aesthetic values.*

*(4) Influence on environment, except that in the case of any line, plant, or system or extension thereof located in another state which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 (Chapter 55 (commencing with Section 4321) of Title 42 of the United States Code) or similar state laws in the other state, the commission shall not consider influence on the environment unless any emissions or discharges therefrom would have a significant influence on the environment of this state.*

The CPUC will consider the "community values" as expressed in the CPUC's proceeding on the DPV2 project and in comments on the Draft EIR/EIS. The CPUC anticipates that the final decision will represent a reasonable balancing of the communities' interests, the need to protect environmental resources in the area, and the need for the project.

## 3. Overview of Alternatives

In total, the alternatives screening process has culminated in the identification and preliminary screening of 35 potential alternatives or combinations of alternatives. These alternatives range from minor routing adjustments to SCE's proposed 500 kV project route, to entirely different transmission line routes, to alternate system voltages, and system designs. Each category is presented below, but not all options described below are analyzed in detail in this EIR/EIS.

Proposed alternatives identified by the Applicant (SCE), the NEPA Lead Agency (BLM), the EIR/EIS team, and the public are listed below according to the determination made for EIR/EIS analysis (i.e., whether or not each is analyzed in the EIR/EIS or eliminated from further analysis). Section 4 presents detailed descriptions of each alternative and detailed explanations of why each was selected or eliminated.

### 3.1 Alternatives Analyzed in the EIR/EIS

The alternatives listed in Table Ap.1-2 have been chosen for detailed analysis in this EIR/EIS through the alternative screening process. These alternatives are described in more detail in Section 4 of this Appendix.

### 3.2 Alternatives Eliminated from EIR/EIS Consideration

This EIR/EIS presents two categories of alternatives eliminated from detailed EIR/EIS consideration. Certain alternatives were eliminated because they clearly did not meet project objectives or were infeasible; these alternatives are described briefly in Section 3.2.1. Other alternatives required more detailed consideration in order to determine whether they should be eliminated; these are listed in Section 3.2.2 and described in more detail in Section 4 of this Appendix.

#### 3.2.1 Alternatives Eliminated After Preliminary Screening

This section describes 10 alternatives that were eliminated after a preliminary alternatives screening process. Alternatives evaluated in the detailed screening process are presented in Section 4 (Alternatives Descriptions and Determinations).

##### 3.2.1.1 EOR 9000+ Project

**Description.** The EOR 9000+ project would upgrade two of the existing transmission lines from Arizona to southern Nevada and California. The project takes its name from the transmission path defined by the Arizona's location east of the Colorado River and the capability of transmission lines to deliver power from Arizona across its Nevada and California state-line borders [East of River (EOR) is also known as Path 49 as defined by WECC]. The two transmission facilities included in the EOR 9000+ project are the Perkins-Mead and Navajo-Crystal 500 kV transmission lines. At present, the path is rated at 7,550 MW. With the improvements associated with the Path 49 Upgrades (described in Section 3.2.1.5 of this report), Path 49 will have an expected rating of 8,055 MW. The EOR 9000+ project is expected to produce a further path rating increase of 1,245 MW which will result in a Path 49 rating of 9,300 MW (thus the 9000+ designation).

Table Ap.1-2. Alternatives Fully Analyzed in EIR/EIS

Alternative	Project Objectives, Purpose and Need	Feasible	Avoid/Reduce Environmental Effects
SCE Harquahala-West Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria. Located in designated BLM Utility Corridor. Approval of TS-5 would not affect this route.	Meets environmental criteria. 14 miles shorter than the proposed route, eliminates 2 crossings of I-10, and reduces visual, biological, and recreation impacts in the areas of Big Horn Mountains Wilderness Area and Burnt Mountain.
SCE Palo Verde Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria. Would serve as a back-up if SCE's contract to use Harquahala Generating Station as the termination point and acquire the Harquahala-Hassayampa 500 kV line falls through.	Meets environmental criteria. Similar environmental impacts to the Proposed Project and would reduce impacts to agricultural resources and biological impacts to the burrowing owl.
Harquahala Junction Switchyard Alternative	SCE would need to enter into an agreement with Harquahala Generating Company and Arizona Public Service (APS) in order to acquire the portion of the existing Harquahala-Hassayampa transmission line between the proposed Harquahala Junction Switchyard and Hassayampa Switchyard in order to complete DPV2. If a successful agreement can be established, this alternative would meet all objectives.	Meets legal, regulatory, and technical feasibility criteria. Arizona Corporation Commission's (ACC) approval of TS-5 Project, including an option to build the Harquahala Junction Switchyard indicates that if APS chooses not to build the switching station, that this alternative would be regulatorily feasible. If it is not built by APS then SCE could pursue construction of the switchyard by seeking a similar ACC approval.	Meets environmental criteria. Eliminates or defers the need for ~18 total miles of new 500 kV transmission line and would lessen impacts to wildlife and habitat, vegetation, noxious weeds, and agriculture in comparison to the Proposed Project.
Alligator Rock-North of Desert Center Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Meets environmental criteria. Eliminates impacts to the highly sensitive biological and cultural area of Alligator Rock ACEC and would be located in a less sensitive area in terms of biological and cultural resources.
Alligator Rock-Blythe Energy Transmission Line Route Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Meets environmental criteria. Reduces biological and cultural impacts in the Alligator Rock ACEC in comparison to the proposed route.
Alligator Rock-South of I-10 Frontage Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria. If DSWTP were built prior to DPV2 then there could be space constraints.	Meets environmental criteria. Reduces biological and cultural impacts in the Alligator Rock ACEC and avoids steeper rocky terrain farther south at the base of the mountains in comparison to the proposed route.
Devers-Valley No. 2 Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Meets environmental criteria. Eliminates the need for the WOD upgrades and avoids impacts associated with traversing high-density residential areas and tribal lands.
Desert Southwest Transmission Line Project Alternatives	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Meets environmental criteria. Similar impacts, but would require construction of 2 additional 25-acre substations and a double-circuit or two parallel 8.8-mile 500 kV lines from Keim to Midpoint Substations. Reduces impacts to biological and cultural resources in the vicinity of Alligator Rock ACEC.



impacts of the Proposed Project without creating greater impacts of its own. Therefore, it was eliminated from consideration.

### **3.2.2 Alternatives Eliminated After Detailed Screening**

Table Ap.1-3 lists the alternatives that were evaluated through the complete screening process, which is described in Section 2 above, but were still eliminated from detailed consideration. The rationale for elimination of each of these alternatives is presented in detail in Section 4 of this Appendix.

Table Ap.1-3. Alternatives Eliminated from EIR/EIS Consideration After Detailed Screening

Alternative	Project Objectives, Purpose, and Need	Feasible	Avoid/Reduce Environmental Effects	Conclusions
SCE North of Kofa NWR-South of I-10 Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria. Eliminates policy issues associated with construction of a new line on protected refuge land, but would be outside of an established BLM Utility Corridor, so it would require BLM approval for creation of a new utility corridor. This requirement would not make the alternative infeasible, but adds to its regulatory complexity.	Avoids impacts to biological and recreational resources within Kofa NWR, but results in similar/greater impacts to these resources outside of Kofa NWR due to more permanent ground disturbance, habitat loss, and the creation of a new corridor. Greater recreational and visual impacts through the La Posa Recreation Areas and along I-10.	Not analyzed due to greater significant impacts on resources.
SCE North of Kofa NWR-North of I-10 Alternative	Meets all project objectives.	Meets legal and technical feasibility criteria. Eliminates policy issues associated with construction of a new line on protected refuge land, but may not be regulatorily feasible to obtain the required amendment to the Lower Gila South Resource Management Plan (RMP), which currently prohibits overhead transmission lines.	Avoids impacts to biological and recreational resources within Kofa NWR, but results in similar/greater impacts to these resources outside of Kofa NWR due to more permanent ground disturbance, habitat loss, and the creation of a new corridor. Greater recreational and visual impacts through the La Posa Recreation Areas and along I-10.	Not analyzed due to greater significant impacts on resources and the challenges in obtaining regulatory approval.
North of Kofa NWR Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria. Eliminates policy inconsistencies associated with construction of a new transmission line on protected refuge land.	Avoids impacts to resources within Kofa NWR and reduces cultural resources impacts, but creates a new corridor with associated ground disturbance and habitat loss.	Not analyzed due to substantially greater impacts to bighorn sheep, currently undisturbed biological resources, and to significant visual resources through previously undisturbed land.
SCE North of Blythe Alternative	Meets all project objectives.	Meets technical feasibility criteria. Would be legally feasible only if the CRIT agrees to the lines being placed on its land. Regulatory feasibility of the route is questionable, because BLM approval of an RMP amendment would be required.	Eliminates biological, recreation, and visual impacts to Kofa NWR and reduces impacts to agricultural land, but greater impacts to biological resources and substantially greater impacts to visual and cultural resources, especially across the CRIT Reservation.	Not analyzed due to greater significant impacts on resources and potential legal and/or regulatory infeasibility.

Table Ap.1-3. Alternatives Eliminated from EIR/EIS Consideration After Detailed Screening

Alternative	Project Objectives, Purpose, and Need	Feasible	Avoid/Reduce Environmental Effects	Conclusions
SCE South of Blythe Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Reduces impacts to agricultural land, but greater ground disturbance with creation of a new transmission corridor. Greater visual and biological resources impacts by Colorado River and Cibola Wildlife Refuge. Higher cultural sensitivity in the Ripley Intaglio and 2 other major intaglio groups and in the Colorado River terraces, Mule Mountain ACEC, and the Palo Verde Mesa.	Not analyzed due to much greater visual, land use, biological resources, recreation, and cultural resources impacts.
Paradise Valley Alternative	Meets all project objectives.	Meets technical feasibility criteria. The Paradise Valley Development and the movement of the utility corridor would not be regulatory feasible if the suggested land exchange is not approved by BLM. Movement of the entire utility corridor (including DPV1) could not legally be pursued under CEQA/NEPA.	If the DPV1 line remains at its current location, the construction of the DPV2 line farther to the south creates greater construction impacts and permanent impacts, such as visual impacts in a new corridor. The Paradise Valley project area is bounded on the south by the Congressionally designated Meca Hills and Orocoopia Mountains Wilderness Areas, and on the north by the Joshua Tree National Park and contains valuable desert tortoise habitat.	Not analyzed due to greater significant impacts on resources and potential legal and/or regulatory infeasibility.
Mesa Verde Substation Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Would require longer access road construction and greater impacts to visual resources, biological resources, and land use.	Not analyzed due to longer access road construction and greater impacts to visual resources, biological resources, and land use with no overall impact reduction.
Wiley Well Substation Alternative	Meets all project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Closer to an existing paved roadway and preferred for cultural resources, but greater visibility, recreational impacts due to its proximity to Chuckwalla Valley Dune Thicket ACEC, and biological impacts to sensitive species, such as Mojave fringed-toed lizard and desert tortoise.	Not analyzed due to greater significant impacts on resources.
North of Existing Morongo Corridor Alternative	Meets all project objectives.	Legal feasibility hinges on approval by the Morongo Tribe of the removal and rebuilding of the lines within the Morongo Indian Reservation. Technical feasibility issues exist with siting the four circuits in or at the base of the San Bernardino Mountains.	Reduces visual resources and land use impacts, but far greater impacts to biological and cultural resources and greater construction time and ground disturbance.	Not analyzed due to feasibility concerns, the Morongo Tribe's consultation statements during the scoping period, and biological and cultural resources impacts.

Table Ap.1-3. Alternatives Eliminated from EIR/EIS Consideration After Detailed Screening

Alternative	Project Objectives, Purpose, and Need	Feasible	Avoid/Reduce Environmental Effects	Conclusions
Composite Conductor Alternative	Use of the outmoded existing structures would leave the WOD corridor incapable of meeting the basic project objective of adding 1,200 MW of transmission import capability. Higher costs would make the economic objectives of the Proposed Project less likely to be achieved.	Meets legal, regulatory, and technical feasibility criteria.	The visual benefit of reducing the number of tower lines in the corridor would not be achieved. Structures could require slightly more frequent maintenance than new towers.	Not analyzed due to failure to meet basic project objectives.
Convert DPV1 from AC to HVDC Transmission Line	Would not meet 2 of 4 project objectives. Outage of HVDC line would force SCE to impose SPS or RAS measures, which would conflict with Project Objectives of increased reliability, insurance value against extreme events, and flexibility in operating the grid. There would also be reduced likelihood of achieving the economic objectives.	Meets legal, regulatory, and technical feasibility criteria.	Requires permanent disruption of 20-40 acres and the introduction of a new industrial land use for each converter station, near Devers and the eastern termination point. Less flexibility for interconnections with other existing or proposed AC transmission lines in the CAISO system, which could lead to construction of additional AC facilities parallel to the HVDC line, such as DSWTP and/or BEPTL.	Not analyzed due to failure to meet basic project objectives.
Underground Alternative	Meets all project objectives. If a short segment were considered (e.g., to avoid a specific high impact area), these technologies may not be cost prohibitive to construct.	Meets legal, regulatory, and technical feasibility criteria. Reliability of underground 500 kV technologies has not been fully demonstrated.	Requires a continuous trench creating significant impacts to soils/erosion, cultural resources, biological resources as well as a longer construction time and the need for transition structures. Operational impacts would also be greater associated with maintenance, access to the lines, and longer repair times.	Not analyzed due to significant environmental impacts, the unproven reliability for long-distance underground 500 kV transmission lines, the reliability concerns associated with the steep slopes and the active fault crossing, and the high cost of these technologies.

Table Ap.1-3. Alternatives Eliminated from EIR/EIS Consideration After Detailed Screening

Alternative	Project Objectives, Purpose, and Need	Feasible	Avoid/Reduce Environmental Effects	Conclusions
New Conventional Generation	Would not meet the following project objectives of: adding transmission import capability into CA, providing access to low-cost energy, or providing additional transmission infrastructure and improving the reliability and flexibility of the region's transmission system.	Meets legal, regulatory, and technical feasibility criteria.	The long-term operational environmental impacts of power plants (i.e., air emissions, water usage) can be balanced against the impacts of long transmission lines.	Not analyzed due to failure to meet basic project objectives.
Renewable Generation Resources	Would not meet the project objectives of increasing California's transmission import capability from the Southwest and enhance and support the competitive energy market in the Southwest.	Meets legal feasibility criteria. Each would not be able to produce 1,200 MW as is required for the DPV2 Project, but several different technologies could be combined. However, the permitting and construction of the various projects within the project timeline would be unlikely and each of the projects would still require the construction of transmission lines to bring the power into the Los Angeles area.	Avoid the specific impacts associated with the construction and operation of the Proposed Project, but new transmission would still be required from the renewable generation locations, creating impacts similar to those of the Proposed Project, which is proposed to transmit power from an already existing generation source.	Not analyzed due to greater significant impacts on resources.
Conservation and Demand-Side Management	DSM and conservation represent a small fraction of the total capacity requirement needed to meet SCE's import and supply reliability objectives. Would not meet project objectives.	Meets legal, regulatory, and technical feasibility criteria.	Reduces energy consumption, thus would reduce the need for power generation and new transmission lines. Avoids all effects of the Proposed Project.	Not analyzed due to failure to meet basic project objectives.
Distributed Generation	Most DG facilities are very small and it does not appear to be feasible to construct and operate a distributed generation alternative in sufficient quantity to meet projected demand growth that can be served by the large-scale generation in the Palo Verde area and no single entity has proposed implementing a substantial DG program	Would not be feasible to construct and operate a distributed generation alternative in quantity sufficient to meet projected demand growth that can be served by the large-scale generation in the Palo Verde area and no single entity has proposed implementing a substantial DG program	Reduces linear construction impacts of transmission lines, because the source of energy generation would be in close proximity to the location of demand. Other environmental effects would depend on the type of generation used.	Not analyzed due to failure to meet basic project objectives.

## 4. Alternative Descriptions and Determinations

### 4.1 Introduction

The alternatives presented in this section include minor routing adjustments to SCE's proposed 500 kV project route, entirely different transmission line routes, alternative system voltages, and system designs, and non-wires alternatives such as generation and conservation. After initial screening, if a potential alternative was found to be unable to meet the basic project objectives, purpose, and need; proven infeasible, or if it did not appear to reduce or avoid potentially significant impacts of the Proposed Project without creating other significant impacts of its own, then it was eliminated from full evaluation (listed in Table Ap.1-2). The alternatives that have been determined to meet the CEQA/NEPA alternatives screening criteria have been retained for full analysis in the EIR/EIS (listed in Table Ap.1-3).

Section 4.2 addresses route alternatives in the Devers-Harquahala (500 kV) segment of the Proposed Project and Section 4.3 discusses West of Devers alternatives. Finally, Section 4.4 discusses technical and non-transmission alternatives. The No Project/Action Alternative is required to be considered in an EIR/EIS by NEPA and CEQA, so is described in Section C.6 of the EIR/EIS and is not discussed in this Appendix.

### 4.2 Devers-Harquahala Route Alternatives

#### 4.2.1 SCE Harquahala-West Alternative

##### Alternative Description

As described in SCE's 2005 PEA, the "Harquahala-West Subalternate Route" would begin at the Harquahala Generating Station Switchyard. Rather than departing the Harquahala Switchyard to the east paralleling the existing Harquahala-Hassayampa 500 kV towers, the Harquahala-West Alternative would depart the Harquahala Generating Station Switchyard to the west and follow section lines due west for approximately 12 miles through private and State lands to the El Paso Natural Gas pipeline corridor. This portion of the route parallels Courthouse Road approximately one mile to the north along section lines to the pipeline corridor. At the pipeline corridor, the transmission line would proceed northwesterly along the pipeline corridor for approximately nine miles to the intersection with the DPV1 transmission line, immediately north of the El Paso Wendon Pump Station. The length of the Harquahala-West Alternative between the Harquahala Switchyard and the junction with the DPV1 line and the proposed route is 21 miles. This alternative is illustrated in Figure Ap.1-1 (see enclosed CD).

Currently, Arizona Public Service Company (APS) is planning for the Palo Verde Hub to TS-5 500 kV transmission line that may parallel DPV1 between the PVNGS interconnection area and the Central Arizona Project (CAP) Canal. SCE originally developed the Harquahala-West Alternative because of a concern that the Palo Verde Hub to TS-5 line may be constructed in a manner that would preclude SCE from entering Harquahala Generating Station Switchyard from the east. In this case, the Harquahala-West Alternative, which would enter Harquahala Generating Station Switchyard from the west, may become SCE's preferred route. The Certificate of Environmental Compatibility for the APS PV Hub to TS-5 Project was approved by the Arizona Corporation Commission on August 17, 2005 (Case 128). Since the

siting hearing. APS has made adjustments to its ten year plan, which resulted in the ability to delay the TS-5 project's in-service date. For this reason APS has stated in a memo to the ACC on December 30, 2005 that it intends to continue to pursue its efforts to reach agreement for interconnection at Duke Energy's Arlington Plant or at a new Harquahala Junction Switchyard. APS will file a follow up report to the ACC at the time a final decision is reached or no later than December 31, 2006.

Even though the final construction plan has not been determined, SCE has stated that the approval of the APS project should not affect the DPV2 project since the two projects are independent of one another unless it reaches the joint party agreement with New Harquahala Generating Company (HGC) and APS. If a joint agreement were to occur then the Harquahala Junction Switchyard could serve as the eastern termination point for the Proposed Project. Terminating the proposed DPV2 project at the proposed Harquahala Junction Switchyard would require SCE to acquire from HGC that portion of the Harquahala-Hassayampa transmission line between the proposed Harquahala Junction Switchyard and Hassayampa Switchyard to complete DPV2 (this is currently proposed as part of SCE's project), and the existing Harquahala-Hassayampa transmission line would also need to be shared by APS to complete the TS-5 Project.

The portion of the Harquahala-West Alternative that follows the pipeline corridor would be located in a designated BLM Utility Corridor. New right-of-way would need to be acquired across private, State, and BLM land. The Harquahala-West Alternative would be constructed using tubular steel pole structures from the Harquahala Generating Station to the Centennial Wash to reduce the affected ground area across farmland. Steel lattice towers (like those used for DPV1) would be used for the portion of the route across desert land west of Centennial Wash to the intersection with DPV1 at the Wendon Pump Station.

Spur roads would be built from the existing access road along the pipeline for construction of towers, and a new access road would be required along the section lines between the Harquahala Switchyard and the pipeline road. A minimum of 160-foot-wide right-of-way would need to be acquired on BLM land, and a minimum of 200-foot-wide right-of-way would need to be acquired on State and private land. Also, construction of a new access road for a portion of the alternative would be required, causing about 5.28 acres more ground disturbance than the proposed Devers-Harquahala route.

#### **Consideration of CEQA/NEPA Criteria**

##### ***Project Objectives, Purpose, and Need***

The Harquahala-West Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project.

##### ***Feasibility***

**Legal and Regulatory Feasibility.** The Harquahala-West Alternative is legal and has no regulatory constraints. The portion of the Harquahala-West Alternative that follows the pipeline corridor would be located in a designated BLM Utility Corridor. New ROW would need to be acquired across private, State, and BLM land, but this would not create any feasibility issues. Similar to the Proposed Project, which also would cross State lands, a ROW easement would need to be obtained from Arizona State Land Department. Arizona State Lands Department owns 9.3 million acres in Arizona and has the ability to deny an alignment since its trust lands are not condemnable by local agencies (only at the federal level). Arizona State Lands approval would occur during the land acquisition process following permitting approval by the CPUC, BLM, and ACC (Beals, 2006).

**Technical Feasibility.** It is technically feasible to construct the Harquahala-West Alternative. Although there was initial concern that the TS-5 line may be constructed in a manner that would preclude SCE from entering Harquahala Generating Station Switchyard from the *east*, SCE has since stated that the approval and construction of the APS project would not affect the DPV2 project. In addition, the Harquahala-West Alternative was developed to alleviate that initial concern. As such, the alternative route would enter Harquahala Generating Station Switchyard from the *west* and would not be affected by the TS-5 project.

#### ***Environmental Advantages***

**Alternative Length.** The Harquahala-West Alternative would be 14 miles shorter than the proposed route (a total distance of 216 miles versus 230 miles for the 500 kV segment of the Proposed Project), and would require about 48 fewer 500 kV towers than the proposed route, thereby eliminating the temporary and permanent impacts associated with construction of those additional towers.

**Biological Resources.** This alternative would be almost 5 miles farther south of Burnt Mountain, which contains suitable habitat for the federally listed<sup>7</sup> cactus ferruginous pygmy owl.

**Recreation.** The alternative would avoid the Proposed Project's visual and recreational impacts to the Big Horn Mountains Wilderness Area (WA) north of I-10.

**Agricultural Resources.** The Harquahala-West Alternative would also avoid approximately 1 mile of impacts to agricultural resources along Thomas Road resulting from the Proposed Project.

**Visual Resources and Transportation.** The alternative would eliminate visual and transportation impacts associated with Proposed Project's two crossings of I-10.

#### ***Environmental Disadvantages***

**Ground Disturbance.** Although this alternative would be 14 miles shorter than the Proposed Project, construction of a new access road for a portion of the alternative route would be required, whereas the Proposed Project would use existing access roads along the DPV1 corridor. As a result, the alternative would cause about 5.28 acres more ground disturbance than the proposed Devers-Harquahala route. This increased ground disturbance could increase impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance.

**Biological Resources.** The agricultural lands that would be crossed by this alternative could also be habitat for biological resources, such as the burrowing owl. The federally protected cactus ferruginous pygmy owls also historically known to occur in the area east of Harquahala Substation to PVNGS and its habitat could be disturbed by this alternative.

**Wilderness and Recreation.** The alternative would pass near the border of the Eagletail Mountains WA, but it is unlikely that it would cross into the WA boundary.

**Land Use.** New ROW would need to be acquired across private, State, and BLM land. This new ROW may set precedent for future development of utilities in this corridor (future land use impacts).

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<sup>7</sup> The Federal Endangered Species Act of 1973, as amended, requires all federal agencies to consider "listed" species in their planning efforts and to take positive actions to further the conservation of these species.



**Agricultural Resources.** The Harquahala-West Alternative would cross approximately three miles of agricultural land that would not be affected by the Proposed Project. It is anticipated that construction activities would temporarily interfere with agricultural operations on these lands, which could reduce production.

**Visual Resources.** Because this alternative route would not be within an existing transmission corridor, new visual impacts to residential viewers would occur, especially to approximately 12 residences off of West Courthouse Road (becomes Centennial Road), which is south of the DPV2 alignment. There would also be new visual impacts to recreationists accessing the east side of the Eagletail Mountains Wilderness Area (WA) and the Courthouse Rock area, given the absence of similar infrastructure features in the vicinity of the Eagletail Mountains.

**Soil Contamination.** Even though the alternative would be shorter than the proposed route segment that it would replace, it would have a greater likelihood that excavation could encounter soils contaminated with pesticides and herbicides that could be present in the three miles of agricultural lands.

#### ***Alternative Conclusion***

**RETAINED FOR ANALYSIS.** This alternative would meet project objectives and would be feasible. Although this alternative would increase visual and recreation impacts in the Eagletail Mountains WA and would cross 3 miles of agricultural lands, it would avoid passing adjacent to the Big Horn Mountains Wilderness Area and two crossings of I-10. It would also avoid one mile of impacts to agricultural resources along Thomas Road. Most importantly the route would be 14 miles shorter than the proposed route, thereby eliminating the temporary and permanent impacts associated with construction of a 500 kV transmission line and towers. Overall, this alternative has the potential to reduce environmental impacts of the Proposed Project, so the Harquahala-West Alternative was retained for full analysis in this EIR/EIS.

### **4.2.2 SCE Palo Verde Alternative**

#### **Alternative Description**

The proposed DPV2 route for the Devers-Harquahala 500 kV transmission line is generally parallel to SCE's existing 500 kV DPV1 transmission line. However, the DPV2 route differs from DPV1 in that the Proposed Project would not terminate at the Palo Verde Nuclear Generating Station (PVNGS). DPV2 as currently proposed involves building a new 500 kV transmission line from Devers to the Harquahala Generating Station Switchyard, and then acquiring the existing Harquahala-Hassayampa 500 kV transmission line. Under the Palo Verde Alternative, the DPV2 line would terminate at the PVNGS Switchyard.

As presented in the 2005 PEA, the Palo Verde Alternative would require construction of a new 500 kV transmission line parallel to the DPV1 transmission line for an additional approximately 14.7 miles to the PVNGS Switchyard. This alternative would avoid the need to construct the proposed 5-mile segment from the Harquahala Generating Station Switchyard to the Harquahala Junction. A diagram of the proposed and alternative route construction configurations is shown on Figure Ap.1-1a (see enclosed CD). Rather than leave the existing DPV1 transmission corridor and follow the existing Harquahala-Hassayampa 500 kV transmission line west to the Harquahala Switchyard, this alternative route would cross from the western side of the DPV1 transmission line to the east, and continue south, parallel to the existing DPV1 and Harquahala-Hassayampa 500 kV lines. The alternative would cross predominantly BLM land to the southeast past Saddle Mountain, and would follow the DPV1 transmission line to the PVNGS Switchyard.

The Certificate of Environmental Compatibility for the Arizona Public Service (APS) PV Hub to TS-5 Project was approved by the Arizona Corporation Commission on August 17, 2005 (Case 128). The final construction plan has not been determined, although the approval provides for the northern portion of the route, located north of the site of the proposed Harquahala Junction Switchyard and crossing I-10, to be constructed within a 1,000-foot-wide corridor east of the existing DPV1 centerline (the proposed DPV2 line will be constructed within the existing BLM right-of-way on the west side of the existing DPV1 line). The approval of the APS project does not affect the DPV2 project. If the Palo Verde Alternative were constructed before the southern portion of the PV Hub to TS-5 Project was constructed, it would take the "first position" east of the existing DPV1 line, or vice versa. In either case, both lines would be constructed within a 1,000-foot-wide corridor located east of the existing DPV1 line if that portion of the DPV2 line were to be needed.

For the Palo Verde Alternative, SCE would lease bandwidth from APS and Salt River Project (SRP) between Black Peak Communication Site and PVNGS to support the primary protection circuits.

## **Consideration of CEQA/NEPA Criteria**

### ***Project Objectives, Purpose, and Need***

The Palo Verde Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project.

### ***Feasibility***

The ACC decision on the TS-5 project provides APS the flexibility to select from several project routing and scope alternatives for the TS-5 project. APS was granted the ability to interconnect at one or more of the following locations: (1) the Duke Arlington Power Plant; (2) a new Harquahala Junction Switchyard; or (3) the Palo Verde Switchyard. It was the preference of both APS and the ACC staff for APS to interconnect at either the Duke Arlington Plant or a new Harquahala Junction Switchyard. Therefore, subject to a joint project arrangement among SCE, APS and Harquahala Generation Company (HGC), the parties would share the existing Harquahala-Hassayampa transmission line and potentially the Harquahala Junction Switchyard (see Section 4.2.3), if constructed. Discussions among SCE, APS and HGC regarding the potential joint project arrangement are ongoing but have not yet resulted in an agreement. APS has stated that it will file a report to the ACC at the time a final decision is reached or no later than December 31, 2006. These negotiations do not affect the regulatory feasibility of this alternative since SCE could still enter into an agreement for use of the existing Harquahala-Hassayampa transmission line and/or build the Harquahala Junction Switchyard regardless of whether the TS-5 project moves forward.

Similar to the Proposed Project, which also would cross State lands, a ROW easement would need to be obtained from Arizona State Land Department. Arizona State Lands Department owns 9.3 million acres in Arizona and has the ability to deny an alignment since its trust lands are not condemnable by local agencies (only at the federal level). Arizona State Lands approval would occur during the land acquisition process following permitting approval by the CPUC, BLM, and ACC (Beals, 2006). Therefore, this alternative would be regulatorily, technically, and legally feasible.

### ***Environmental Advantages***

**Biological Resources.** Because one mile of agricultural land would be avoided with this alternative, potential impacts to burrowing owls located in the agricultural lands would be reduced.

**Agricultural Resources.** The Palo Verde Alternative would avoid approximately one mile of agricultural land that would be crossed by the Proposed Project where construction and operation could interfere with agricultural operations.

### ***Environmental Disadvantages***

**Alternative Length and Ground Disturbance.** This route would be approximately 9.7 miles longer than the proposed route, which will affect the length and intensity of short-term construction impacts and ground disturbance, affecting air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, water use for dust suppression, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance.

**Biological Resources.** This alternative would increase the acreage of temporary and permanent disturbance, therefore increasing the chance that special status species would be affected. Also, this increase in disturbance area could increase the chance of noxious weed introduction and also remove more native desert vegetation.

This route would also increase the chance of affecting more suitable cactus ferruginous pygmy owl habitat than starting the line at the Harquahala Switchyard. The pygmy owl was listed as Federally Endangered in 1997 and occurs in a variety of desert habitats at the eastern end of the project area and its western population includes lowland, central Arizona. The route would also cross through Category 2 desert tortoise habitat,<sup>8</sup> which could be impacted and would need to be replaced through mitigation at a 1:1 ratio.

**Visual Resources.** There would be the potential for adverse visual impacts on views of Saddle Mountain from westbound Salome Highway. If placement of towers is not in line with existing towers, adverse impacts could also be severe. There would also be adverse visual impacts to approximately eight residences on along the east-west portion of DPV2 route in the vicinity of Elliot Avenue and west of PVNGS.

**Roadway Crossings.** The transportation impacts of this alternative would be slightly greater than the Proposed Project's termination at Harquahala Generating Station, because it would require approximately four additional local roadway crossings.

### **Alternative Conclusion**

**RETAINED FOR ANALYSIS.** This alternative would meet project objectives and would be feasible. Although this alternative would be 9.7 miles longer than the Proposed Project and would create visual impacts on residential views and views of Saddle Mountain, the Palo Verde Alternative would have largely similar environmental impacts to the Proposed Project and it would reduce impacts to agricultural resources and biological impacts to the burrowing owl.

In addition, this route would serve as a back-up if SCE's contract to use Harquahala Generating Station as the termination point and acquire the existing Harquahala-Hassayampa 500 kV transmission line falls through and SCE has to build a new line to the PVNGS Switchyard. Environmental impacts would be largely similar or reduced overall and depending on the outcome of contract negotiations, this alternative

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<sup>8</sup> The BLM has developed three categories for its land to identify comparative value of desert tortoise habitat. Category 1 is considered the highest quality tortoise habitat, and Category 2 is the next highest. Category 3 areas may contain high quality tortoise habitat and high density of tortoises, but because of resource conflicts the Bureau has assigned the area Category 3.

may be the only feasible option for SCE. Therefore, the Palo Verde Alternative has been retained for full evaluation in this EIR/EIS.

### 4.2.3 Harquahala Junction Switchyard Alternative

#### Alternative Description

Overview: This alternative would eliminate the need for construction of the last five miles of the Proposed Project (east of the Harquahala Switchyard). In this alternative, a switchyard would be constructed five miles east of the Harquahala Generating Station to allow the new DPV2 transmission line to interconnect with existing lines at that location, eliminating the need to connect at a substation. The switchyard could also allow interconnection of the Arizona Public Service (APS) TS-5 Project at that point, and because the TS-5 Project has already been approved by the Arizona Corporation Commission, it is possible that APS would construct the switchyard before the DPV2 Project is built.

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This alternative would require construction of a new switching station east of the Harquahala Generating Station, at the point where the existing Harquahala-Hassayampa and DPV1 transmission lines diverge (a location called "Harquahala Junction"). This alternative would avoid the need to construct the 5-mile segment of the Proposed Project from Harquahala Junction to the Harquahala Generating Station Switchyard. Under this alternative, the Harquahala Junction Switchyard would be built on a site of between 6 and 40 acres in the southwest quarter of Section 25, Township 2 North, Range 8 West, near the intersection of 451st Avenue and the Thomas Road alignment in unincorporated Maricopa County, Arizona. The land is undisturbed desert open space and this alternative is illustrated in Figure Ap.1-1 (see enclosed CD). Detailed figures of the different scenarios are depicted on Figure Ap.1-1a (see enclosed CD).

The Harquahala Junction Switchyard Alternative was developed by the EIR/EIS team because construction of such a switchyard by Arizona Public Service (APS) has already been approved as part of the Certificate of Environmental Compatibility for the APS PV Hub to TS-5 Project. The final construction plan for APS has not been determined, but the approval provides APS with the option to construct a Harquahala Junction Switchyard. If the Harquahala Junction Switchyard is built as part of that project, the first phase of the southern portion of the PV Hub to TS-5 Project would terminate there, and construction of 14.7 miles of the TS-5 Project 500 kV line along the existing DPV1 alignment between Harquahala Junction and the Palo Verde Nuclear Generation Station or Duke Arlington Power Plant could be deferred.

Since the siting hearing, APS has made adjustments to its ten year plan, which has resulted in the ability to delay the TS-5 project's in-service date. For this reason APS has stated in a memo to the ACC on December 30, 2005 that it intends to continue to pursue its efforts to reach agreement for interconnection at the Duke Arlington Plant or at a new Harquahala Junction Switchyard. APS will file a follow up report to the ACC at the time a final decision is reached or no later than December 31, 2006.

If the Harquahala Junction Switchyard were constructed, it would serve as the eastern termination point for the Proposed Project. Terminating the proposed DPV2 project at the proposed Harquahala Junction Switchyard would require SCE to acquire from New Harquahala Generating Company (HGC) that portion of the Harquahala-Hassayampa transmission line between the proposed Harquahala Junction Switchyard and Hassayampa Switchyard to complete DPV2 (this is currently proposed as part of SCE's project), and the existing Harquahala-Hassayampa transmission line would also need to be shared by APS to complete the TS-5 Project.

The current option agreement between SCE and HGC requires that, unless mutually amended by SCE and HGC, SCE purchase all of the Harquahala-Hassayampa transmission facilities, including the Harquahala Generating Station Switchyard, if SCE exercises its right under the option. SCE, HGC, and APS are currently discussing a joint project arrangement in which the parties would share the existing transmission line from Harquahala Junction to Hassayampa to defer or eliminate the need for APS to construct an additional line into the Palo Verde Hub. Those discussions are subject to a Non-Disclosure Agreement among the parties.

In the event the parties reach an agreement and the Harquahala Junction Switchyard Alternative is pursued, the three parties would share the existing Harquahala Junction-Hassayampa transmission line and possibly share the Harquahala Junction Switchyard. This would provide SCE with access to the Hassayampa area, which would obviate the need for the SCE Palo Verde Alternative. The Harquahala Junction Switchyard might also need to be shared by SCE, APS, and HGC.

### **Consideration of CEQA/NEPA Criteria**

#### ***Project Objectives, Purpose, and Need***

Under this alternative, SCE would need to enter into an agreement with HGC and APS in order to acquire the portion of the existing Harquahala-Hassayampa transmission line between the proposed Harquahala Junction Switchyard and Hassayampa Switchyard in order to complete DPV2 and achieve the DPV2 project objectives. If a successful agreement can be established, the Harquahala Junction Switchyard Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project.

#### ***Feasibility***

The Harquahala Junction Switchyard Alternative would be both technically and legally feasible. The ACC's approval of the PV Hub to TS-5 Project, including an option for APS to build the Harquahala Junction Switchyard indicates that if APS chooses not to build the switching station, that this alternative would be feasible from a regulatory perspective. If APS decides not to build the Harquahala Junction Switchyard as a part of that project, SCE could pursue construction of the switchyard by seeking a similar approval by the ACC. Otherwise, if APS builds the switchyard itself then this alternative could not feasibly be built by SCE.

#### ***Environmental Advantages***

**Ground Disturbance.** This alternative would eliminate 5 miles of temporary and permanent impacts associated with the construction of a 500 kV transmission line between the Harquahala Generating Station and Harquahala Junction. This would eliminate impacts to agricultural land and habitat resulting from the construction of this proposed line segment and a new permanent access road for the transmission line, approximately 8.5 acres. This alternative could also defer or eliminate the need for APS to build roughly 14.7 miles of new 500 kV line for the TS-5 Project along the existing DPV1 alignment between Harquahala Junction and the PVNGS or Arlington Power Plant. The Harquahala Junction Switchyard Alternative would occupy a minimum of 6 acres and up to 40 acres. Eliminating or deferring the need for almost 20 total miles of new 500 kV transmission line segments would reduce the impacts of short-term construction and ground disturbance as well as impacts to permanent habitat and vegetation removal and the conversion of farmland.

**Biological Resources.** This alternative would eliminate impacts to the agricultural lands that would be crossed between Harquahala Junction and Harquahala Substation with the proposed route. These agri-

cultural lands could also be habitat for biological resources, such as the burrowing owl. Impacts to the federally protected cactus ferruginous pygmy owls and/or its habitat, which is also historically known to occur in the area east of Harquahala Substation to PVNGS, would be reduced due to the elimination or deferral of almost 20 miles of new 500 kV transmission lines.

### ***Environmental Disadvantages***

**Ground Disturbance.** While eliminating the need for 5 miles of new transmission lines, construction of this station would require grading and construction on up to 40 acres of undisturbed desert land. Impacts from dust and noise would occur, and impacts to cultural and biological resources would result. These impacts would have to be balanced against similar impacts that would be avoided from construction of new transmission lines.

**Visual Resources.** The construction of a new switching station in this location would add a level of additional visual complexity to the landscape with the facility. Although the location is already occupied by two merging corridors of 500 kV transmission lines, the addition of the switching station would increase the obstruction of views of Saddle Mountain and the surrounding landscape.

### **Alternative Conclusion**

**RETAINED FOR ANALYSIS.** This alternative would meet project objectives and would be feasible. This alternative would eliminate or defer the need for almost 20 total miles of new 500 kV transmission line segments, but it would create impacts from switchyard construction. Overall, the Harquahala Junction Switchyard Alternative would lessen impacts to wildlife and habitat, vegetation, noxious weeds, and agriculture in comparison to the Proposed Project. Other impacts would be similar or marginally less than the Proposed Project, with the exception of visual impacts which could be marginally greater under the alternative. Consequently, this alternative has been retained for further analysis.

## **4.2.4 SCE North of Kofa NWR–South of I-10 Alternative**

This alternative is one of several that were considered as methods of avoiding impacts to the Kofa National Wildlife Refuge (NWR). Three other alternatives are evaluated that would avoid the Kofa NWR; they are addressed in Appendix 1 Sections 4.2.5, 4.2.6, and 4.2.7. The EIR/EIS did not specifically consider an alternative that would parallel I-10 within the highway right-of-way, because the Arizona Department of Transportation (ADOT) would have to issue an encroachment permit for this use. Any alternative that would occupy an ADOT Highway ROW would be subject to the "Arizona Encroachments in Highway Rights of Way" (Rule No. R-17-3-702) as well as additional provisions required to obtain ADOT approval for a lease of a longitudinal corridor. However, according to the ADOT Guide For Accommodating Utilities On Highway Rights-Of-Way (1998),<sup>9</sup> "New longitudinal electric lines will *not* be permitted to be installed within the control of access<sup>10</sup> lines in any location other than within ADOT established utility corridors except in special cases." ADOT defines "special cases" very narrowly. Only an underground lease would be considered within the "control of access" area, and this has been done only in one case (in an urban area). An overhead line would not be allowed (McNary, 2006). See Section 4.4.3 for a discussion of undergrounding the DPV2 line.

<sup>9</sup> Arizona Department of Transportation, Utility and Railroad Engineering Section. 1998. Online at [http://www.azdot.gov/Highways/utilities/pdf/guide\\_a.pdf](http://www.azdot.gov/Highways/utilities/pdf/guide_a.pdf). June 12.

<sup>10</sup> "Control of Access" refers to locations where owners or occupants of abutting lands and other persons have no legal right of access

## Alternative Description

This alternative route in Arizona was evaluated in the BLM's EIS (1978) for the DPV1 transmission line. The route was also selected for further evaluation for the 1985 DPV2 project by both SCE and BLM at the time of the previous studies in response to potential concerns regarding impacts to the Kofa NWR and protection of the desert bighorn sheep. SCE also included a similar alternative in the 2005 PEA as Subalternate 1 (North of Kofa NWR, South of I-10 Subalternate Route).

The North of Kofa NWR-South of I-10 Alternative would diverge from the proposed DPV2 route approximately 42.5 miles from its origin at Harquahala Switchyard. The route would head northwest approximately 1.5 miles before turning west-northwest towards I-10, and crossing north of Kofa NWR and the New Water Mountains. Approximately 16 miles from where the route diverged, it would parallel I-10 for 7 miles before turning west away from the interstate for another 4 miles. The route would jog to the northwest for 1.5 miles, then west where it would again parallel I-10 for 1 mile, then would jog back to the southwest. As defined by SCE, the route would head southwest for approximately 14.5 miles, crossing through La Posa Recreation Site and Long-Term Visitor Area, eventually rejoining the proposed DPV2 route 0.5 miles north of Yuma Proving Ground and 8 miles west of Kofa NWR.

The North of Kofa NWR-South of I-10 Alternative would be 3.4 miles longer than the proposed route and would cross 0.75 miles of private land, 3 miles of Arizona State land, and 78.7 miles of BLM land (SCE, 2005a, Table 3-3). This alternative is illustrated in Figure Ap.1-2 (see enclosed CD) and in Figure Ap.1-2a in Volume 3 of this EIR/EIS.

## Consideration of CEQA/NEPA Criteria

### *Project Objectives, Purpose, and Need*

The North of Kofa-South of I-10 Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project. However, it would likely take more time to complete permitting requirements, so it would not likely be completed by the end of 2009.

### *Feasibility*

**Technical and Legal Feasibility.** The North of Kofa NWR-South of I-10 Alternative would be technically and legally feasible.

**Regulatory Feasibility.** Because the alternative would be on BLM lands outside of an established BLM utility corridor, its approval would require BLM approval for creation of a new utility corridor. Because the Resource Management Plan does not specifically prohibit transmission lines in this area, a new ROW grant would be required, but a Plan amendment would not be necessary. This requirement would not make the alternative infeasible, but adds to the regulatory complexity of the alternative. This alternative would be technically, legally, and regulatorily feasible.

### *Environmental Advantages*

**Biological Resources.** National Wildlife Refuge System Administration Act of 1966 and Wilderness Act of September 3, 1964 (16 U.S.C. 1121) state the importance of fulfilling the mission of the refuge and the Kofa National Wildlife Refuge & Wilderness and New Water Mountains Wilderness Interagency Management Plan and Environmental Assessment (1996) states that the primary function of the refuge is wildlife management, with all other uses (e.g., recreation) being secondary (USFWS, 1996). The

alternative route would fulfill this purpose and would eliminate new impacts to biological resources within the Kofa NWR and adjacent wilderness area from the creation of a second set of towers and associated spur roads. Construction of the transmission line through the Kofa NWR could affect bighorn sheep and remove additional vegetation from an already disturbed area. Both the additional disturbance and additional maintenance activities would affect bighorn sheep and other special status species, such as the Sonoran Desert tortoise (BLM sensitive and State Wildlife of Special Concern in Arizona [WSCA]) and loggerhead shrikes, a BLM sensitive status bird.

**Recreation.** National Wildlife Refuge System Administration Act of 1966 (Title 16, Chapter 5a, Subchapter III, Section 668dd) Subsections (a)(3)(A) and (C) state that "each refuge shall be managed to fulfill the mission of the System, as well as the specific purposes for which that refuge was established;" and "compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consideration in refuge planning and management." Therefore, avoidance of Kofa NWR and protection of recreational resources would be a priority (second only to wildlife management) under the Act. Use of this alternative route would eliminate impacts to recreational resources within the Kofa NWR and adjacent wilderness area. It would also avoid construction activities that would disrupt recreation in these areas as well as a second utility corridor through these areas, which would reduce their recreational value on this protected wilderness land.

**Land Use.** In addition to the National Wildlife Refuge System Administration Act of 1966, portions of the Kofa NWR that have been designated as Kofa Wilderness would be subject to the Wilderness Act of September 3, 1964 (16 U.S.C. 1-1-21), which describes the uses that would be specifically prohibited within a wilderness area. Section 4(c) states

*There shall be no commercial enterprise and no permanent road within any wilderness area designated by this chapter and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this chapter (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.*

In addition, the Kofa National Wildlife Refuge & Wilderness and New Water Mountains Wilderness Inter-agency Management Plan and Environmental Assessment (1996) states that the primary function of the refuge is wildlife management, with all other uses (e.g., recreation) being secondary (USFWS, 1996). The Management Plan refers to a number of USFWS Wilderness Objectives (Manual 6 RM 8.2 and 8.3) including the following which influence the management of the Kofa NWR: (1) Manages so as to maintain the wilderness resource for future benefit and enjoyment; (2) Preserve the wilderness character of the biological and physical features of the area; (3) Provide opportunities for research, solitude, and primitive recreational uses; (4) Retain the same level of pre-wilderness designation condition of the area; and (5) Ensure that the works of man remain substantially unnoticeable. Therefore, use of an alternative that would entirely avoid Kofa NWR would be consistent with these policies and objectives and would eliminate the impacts and policy inconsistencies associated with the construction and installation of the Proposed Project through the protected wilderness area.

**Visual Resources.** The North of Kofa-South of I-10 Alternative would eliminate visual impacts that would result from adding a second set of towers adjacent to the existing corridor through the Kofa NWR, which would be inconsistent with policies discussed under Recreation and Land Use above.



### ***Environmental Disadvantages***

**Additional Length and Ground Disturbance.** This route would be approximately 3.4 miles longer than the proposed route, which will affect the length and intensity of short-term construction impacts and ground disturbance, increasing impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation.

In addition, the Proposed Project would be able to utilize existing access roads for access to new transmission towers (though new spur roads would be required). According to SCE, the North of Kofa NWR-South of I-10 Alternative, however, would require an additional 48.3 miles of access and spur roads which would result in permanent ground disturbance and corresponding loss of habitat.

Tables Ap.1-3a and Ap.1-3b compare project components and impacts associated with the Proposed Project and the North of Kofa NWR Alternatives (see also Sections 4.2.5 and 4.2.6). Note that the Proposed Project, overall, would result in substantially less acreage of new disturbance (the SCE North of Kofa NWR – South of I-10 Alternative would affect 87.8 acres of additional disturbance).

Table Ap.1-3a. Comparison of Project Components between Proposed Project Mileposts 42.0 and 86.0

	Proposed Project	SCE North of Kofa – North of I-10 Alternative	SCE North of Kofa – South of I-10 Alternative	North of Kofa Alternative
Length of transmission line	44.0 miles	49.1 miles	47.4 miles	55.0 miles
Number of Lattice Steel Towers (approximate)	150	167	161	187
New Access Roads	0.0 miles	46.0 miles	44.3 miles	51.4 miles
New Spur Roads	3.7 miles	4.1 miles	4.0 miles	4.6 miles
<b>New Permanent Area Occupied (acres)</b>				
Tower Footings	1.5	1.7	1.6	1.9
Access Roads	0.0	78.0	75.2	87.2
Spur Roads	6.2	7.0	6.7	7.8
Series Compensation	2.0	2.0	2.00	2.0
Total	9.7	88.7	85.6	98.9
<b>New Temporary Area Occupied (acres)</b>				
Transmission Line Structures	134.6	150.2	145.0	168.3
Construction Yards	5.0	5.0	5.0	5.0
Pulling Stations	13.2	14.7	14.2	16.5
Splicing Stations	2.9	3.3	3.2	3.7
Batch Plant Areas	2.9	3.3	3.2	3.7
Series Capacitor Banks	1.00	1.0	1.00	1.0
Total	159.7	177.5	171.6	198.1
<b>Total Area Occupied (acres)</b>				
<b>Grand Total</b>	<b>169.4</b>	<b>266.2</b>	<b>257.2</b>	<b>297.0</b>

Note: Affected area estimates are based on the following factors:

- 0.010 acre per lattice steel tower- permanent
- 14' (width) x 130' (length) spur roads at every tower – permanent
- 14' (width) access roads - permanent
- 0.9 acre per tower pad – temporary
- 0.9 acre per pulling station, one every 3 miles – temporary
- 0.2 acre per splicing station, one every 3 miles – temporary
- 2.0 acres per batch plant, one every 30 miles – temporary
- Areas occupied by facilities installed within existing substation and communications site properties are not included in estimates.

Source: SCE, 2005.

**New Transmission Corridor.** This alternative would establish a new transmission line corridor . In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors.

Table Ap.1-3b presents a comparison of linear miles of impacts for each alternative that avoids Kofa NWR (see also Sections 4.2.5 and 4.2.6) in areas of high resource value: desert tortoise habitat, bighorn sheep habitat and lambing grounds, recreational areas, and BLM Resource Management Plan restricted areas. Each of these topics is addressed below the table and is depicted on Figure Ap.1-2a in Volume 3 of this EIR/EIS.

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Table Ap.1-3b. Comparison of Impacts between Proposed Project and North of Kofa Alternatives

Alternative	Acres of Disturbance	Miles of Category 2 Desert Tortoise Habitat Traversed	Miles of Bighorn Sheep Habitat Traversed	Distance to nearest Lambing Ground	Miles through Recreation Area or Kofa NWR	BLM RMP Restrictions
Proposed Project	169.4 acres	0.0 miles	16.2 miles	0.6 miles	25.0 miles (Kofa NWR)	None
SCE North of Kofa – North of I-10	266.2 acres (96.8 acres more than Proposed Project)	9.4 miles	9.4 miles	0.2 miles	6.9 miles (La Posa Recreation Site and LTVA; La Posa Designated Camping Area)	Lower Gila South RMP prohibits overhead transmission lines between townships 16W and 18W
SCE North of Kofa – South of I-10	257.2 acres (87.7 acres more than Proposed Project)	4.5 miles	4.5 miles	1.3 miles	5.1 miles (La Posa Recreation Site and LTVA; La Posa Designated Camping Area)	None
North of Kofa	297.0 acres (127.6 acres more than Proposed Project)	16.3 miles	16.3 miles	0.3 miles	0.0 miles (La Posa Recreation Site and LTVA; La Posa Designated Camping Area)	None

**Biological Resources – Wildlife.** Although the alternative would avoid crossing the Kofa NWR, it could have greater adverse impacts than the Proposed Project as the route would create a new disturbed corridor through undisturbed BLM Category 2 Desert Tortoise habitat, which could increase impacts and mitigation for tortoises rather than building adjacent to an existing line. The Proposed Project in Kofa NWR, while on valuable desert tortoise habitat, does not have a comparative habitat designation since it would not be on BLM-administered land. In addition, there would be a greater potential to impact bighorn sheep with a new corridor along this alternative route.

**Recreation.** The North of Kofa NWR–South of I-10 Alternative would cross through the heavily used La Posa Recreation Site and Long-Term Visitor Area and adjacent to the La Posa Designated Camping Area. Mineral and gem shows and swap meets during the winter draw tens of thousands of visitors to these recreation areas every year. Construction activities would disrupt recreation in these areas and a new utility corridor through these areas would reduce their recreational value.

**Visual Resources.** As the transmission line would diverge from the existing DPV1 ROW, it would create new visual impacts with the creation of a new utility corridor. The route would reduce scenic views of the Plomosa Mountains and New Waters Mountains from I-10. Additionally, where the route would cross Highway 95 and the La Posa Plains, the alternative would impact views from residences and recreationists using the La Posa Recreation Site and Long-Term Visitor Area.

#### Alternative Conclusion

**ELIMINATED.** This alternative would meet project objectives and would be feasible. Although the alternative would reduce impacts to biological and recreational resources within Kofa NWR, it would result in similar or greater impacts to these resources outside of Kofa NWR. The alternative would traverse similar habitat for biological resources as the Proposed Project, but would result in substantially more permanent ground disturbance and habitat lost. The alternative's route through the La Posa

Recreation Areas would impact a greater number of recreation users than the Proposed Project's route through Kofa NWR. Views from I-10 and residences and recreation areas along Highway 95 and along the La Posa Plains would be impacted by the new transmission corridor created by the alternative and would reduce the scenic quality of these views. As a result of greater impacts to recreation, visual, and biological resources, this alternative was eliminated from further consideration in this EIR/EIS.

#### 4.2.5 SCE North of Kofa NWR–North of I-10 Alternative

##### Alternative Description

This alternative was included in SCE's 2005 PEA as Subalternate 4 (North of Kofa, North of I-10 Subalternate), which was considered and eliminated in SCE's PEA. This alternative is similar to the North of Kofa NWR–South of I-10 Alternative (see Section 4.2.5), except it would cross I-10 twice and Arizona U.S. Highway 60 once to follow the Celeron/All American Pipeline corridor north of I-10. Approval of this alternative would require an amendment to the BLM's Lower Gila South RMP. This alternative is illustrated in Figure Ap.1-2 (see enclosed CD) and in Figure Ap.1-2a in Volume 3 of this EIR/EIS.

This alternative would begin by following the same route from the east as described above for the North of Kofa NWR–South of I-10 Alternative, but would turn north to cross I-10 after the route parallels I-10 for approximately 7 miles. Once on the north side of I-10, the alternative would turn west-northwest to parallel the interstate for approximately 2.5 miles. The line would turn northwest for 1 mile to cross Highway 60, skirting the Plomosa Mountains north of Highway 60 and I-10, then would turn back southwest for 2 miles back to I-10. The route would turn westerly to parallel the interstate again for another 6 miles. From here, the alternative would turn and head south-southwest for 5 miles, crossing to the south side of I-10, through 2 miles of BLM La Posa Designated Camping Area and another 2 miles of BLM La Posa Long-Term Visitor Area. At this point, the route would turn southwest and follow the North of Kofa NWR–South of I-10 Alternative back to the Proposed Project route, crossing through another 4 miles of La Posa Long-Term Visitor Area and La Posa Designated Camping Area.

##### Consideration of CEQA/NEPA Criteria

###### *Project Objectives, Purpose, and Need*

The North of Kofa NWR–North of I-10 Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project. However, it would likely take more time to complete permitting requirements, so it would not likely be completed by the end of 2009.

###### *Feasibility*

**Technical and Legal Feasibility.** The North of Kofa NWR–North of I-10 Alternative would be technically and legally feasible to construct.

**Regulatory Feasibility.** Approval of this alternative would require an amendment to the Lower Gila South RMP. The Lower Gila South RMP prohibits overhead lines north of I-10 between townships 16W and 18W (BLM, 1985). This restriction on overhead lines establishes an 18-mile wide strip running north of I-10 to the northern boundary of the RMP, approximately 17 miles north of I-10. The Lower Gila South RMP prohibits overhead lines in this area due to sensitive lambing grounds for bighorn sheep and sensitive visual resources. The requirement for a plan amendment may not make the alternative infeasible, but it would add a series of regulatory requirements: (a) NEPA clearance of the plan amendment would

be required; (b) public noticing would be required by filing in the Federal Register; (c) an extension of the Draft EIR/EIS public review period from 60 to 90 days; and (d) a 60-day Governor's Consistency Review following the publishing of the Final EIR/EIS. The Final EIR/EIS would also have to identify in its title that the EIR/EIS also evaluates a proposed Plan Amendment. It is not known at this time whether BLM would approve the required plan amendment; therefore, regulatory feasibility is not certain.

While this alternative would be technically and legally feasible, its regulatory feasibility is in doubt.

### ***Environmental Advantages***

**Biological Resources, Recreation, Land Use and Visual Resources.** Please see discussion under these subsections of Section 4.2.4 above.

### ***Environmental Disadvantages***

**Additional Length and Ground Disturbance.** This route would be approximately 5.1 miles longer than the proposed route, which would affect the length and intensity of short-term construction impacts and ground disturbance, including impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. Therefore the alternative would also have greater permanent ground disturbance and corresponding loss of habitat.

Tables Ap.1-3a and Ap.1-3b (see Section 4.2.4) compare project components and impacts associated with the Proposed Project and the North of Kofa NWR Alternatives. Note that the Proposed Project, overall, would result in substantially less acreage of new disturbance (the SCE North of Kofa NWR – North of I-10 Alternative would affect 96.8 acres of additional disturbance).

**New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs. As discussed above under Feasibility, plan amendments would be necessary in order for the BLM to grant approval of this alternative ROW due to its location through townships 16W to 18W north of I-10.

Table Ap.1-3b (see Section 4.2.4) presents a comparison of linear miles of impacts for each alternative that avoids Kofa NWR in areas of high resource value: desert tortoise habitat, bighorn sheep habitat and lambing grounds, recreational areas, and BLM Resource Management Plan restricted areas. Each of these topics is addressed below the table and is depicted on Figure Ap.1-2a in Volume 3 of this EIR/EIS.

**Biological Resources – Wildlife.** Although the alternative would avoid crossing the Kofa NWR, it would have a greater adverse impact to bighorn sheep than the Proposed Project. The alternative's route between townships 16W and 18W would result in impacts to bighorn sheep lambing grounds identified in the BLM's Lower Gila South RMP, an area deemed unsuitable for overhead transmission lines. Additionally, the route would pass through BLM Category 2 Desert Tortoise habitat, which could increase impacts and mitigation for tortoises.

**Recreation.** The North of Kofa NWR–North of I-10 Alternative would cross through the La Posa Designated Camping Area in two locations as well as crossing the La Posa Recreation Site and Long-Term Visitor Area. This alternative would cross 3.5 more miles of recreation area than the North of Kofa NWR–South of I-10 Alternative, with construction potentially disrupting recreation associated with the winter mineral and gem shows and swap meets and reducing the overall recreational value of these areas.

**Visual Resources.** As the transmission line would diverge from the existing DPV1 ROW, the alternative would create new visual impacts with the creation of a new utility corridor and would impact views both to the north and south of I-10 in different areas, at the two I-10 crossings east and west of the Plomosa Mountains, and the crossing of Highway 60 southwest of Brenda. Similar to the North of Kofa NWR–South of I-10 Alternative, the route would reduce scenic views of the Plomosa Mountains and New Waters Mountains from I-10. Additionally, where the route would cross Highway 95 and the La Posa Plains, the alternative would impact views from residences and recreationists using the La Posa Recreation Site and Long-Term Visitor Area.

#### Alternative Conclusion

**ELIMINATED.** This alternative would meet project objectives, but it may not be feasible to obtain the required amendment to the Lower Gila South RMP, which currently prohibits overhead transmission lines. While the alternative would reduce impacts to biological and recreational resources within Kofa NWR, it would likely result in greater impacts to these resources outside of Kofa NWR. The route would traverse similar habitat for biological resources as the Proposed Project but those resources would not be within a designated wildlife refuge. It would result in substantially more permanent ground disturbance and a large amount of habitat lost, so it would result in significant impacts to sensitive bighorn sheep or desert tortoise populations. The alternative route through the La Posa Recreation Areas would impact a greater number of recreation users than the Proposed Project's route through Kofa NWR, and would impact more users than the North of Kofa NWR–South of I-10 alternative. Views from I-10 and residences and recreation areas along Highway 95 and along the La Posa Plains would be impacted by the new transmission corridor created by the alternative and would reduce the scenic quality of these views. As a result of greater impacts to recreation, visual, and biological resources, and the challenges in obtaining regulatory approval, the North of Kofa NWR–North of I-10 Alternative was eliminated from further consideration in this EIR/EIS.

### 4.2.6 North of Kofa NWR Alternative

#### Alternative Description

Several potential alternatives north of Kofa NWR have been analyzed in various documents, beginning in BLM's EIS (1978) for the DPV1 transmission line and most recently in SCE's 2005 PEA as Subalternate 1 (SCE's North of Kofa NWR–South of I-10 Subalternate Route; see Section 4.2.2 above) and Subalternate 4 (SCE's North of Kofa–North of I-10 Subalternate Route; see Section 4.2.3 above). Consideration of these alternatives occurred in response to potential concerns regarding impacts to the KOFA NWR and protection of the desert bighorn sheep. In order to reduce the impacts of the SCE-identified subalternate routes and still avoid the Kofa NWR, the EIR/EIS team developed an alternative that would be shorter and further south than the SCE alternatives. This 37-mile alternative would diverge from the proposed route at the series capacitor just east of the Kofa NWR. It would replace a proposed route segment that is approximately 27 miles long. The alternative route would turn to the north and would parallel the boundary of Kofa NWR for 2.5 miles to its northeast corner. At that point the route would turn to the west and would continue to parallel Kofa NWR boundary for 4.5 miles to the eastern boundary of the New Water Mountains WA where the route would turn to the northwest for approximately 7.0

miles until the route is north of the New Water Mountains and approximately 1.8 miles south of I-10. The route would then turn to the southwest for 2 miles through a mountain pass back to the northern boundary of the New Water Mountains WA. Near the boundary the alternative would turn to the northwest for 3.5 miles and then west for 2.4 miles. At this point the route would turn to the northwest again to travel north around the area being considered by BLM as the future Dripping Springs ACEC for 5.9 miles until the route is approximately 1.25 miles south of I-10 and then south-southwest for 9.7 miles. It would rejoin the Proposed Project approximately 1.25 miles west of the boundary of Kofa NWR and south of Quartzsite. This alternative is illustrated in Figure Ap.1-2 (see enclosed CD) and in Figure Ap.1-2a in Volume 3 of this EIR/EIS.

### Consideration of CEQA/NEPA Criteria

#### *Project Objectives, Purpose, and Need*

The North of Kofa Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project. However, it would likely take more time to complete permitting requirements, so it would not likely be completed by the end of 2009.

#### *Feasibility*

**Technical and Legal Feasibility.** Construction of a transmission along this route would be technically and legally feasible.

**Regulatory Feasibility.** While the route would be outside of the BLM utility corridor (within one mile of I-10), BLM states that no plan amendment would be required since construction of a transmission line is not prohibited by the Lower Gila South Resource Management Plan in this area.

Thus, overall this alternative would be technically, legally, and regulatorily feasible.

#### *Environmental Advantages*

**Biological Resources, Recreation, Land Use and Visual Resources.** This alternative would avoid additional construction within the Kofa NWR, similar to the routes described in Sections 4.2.4 and 4.2.5 above. Please see discussion of Environmental Advantages under the subsections for biological resources, recreation, land use, and visual resources in Section 4.2.4 above.

**Cultural Resources.** Based on information provided with SCE's PEA, more than 30 archaeological sites have been recorded within the corridor of the proposed DPV2 route as it crosses the Kofa NWR. Five of these sites (AZ S:8:48, AZ S:8:51, AZ S:8:52, AZ S:5:2, and AZ S:5:30) are considered to be eligible for inclusion in the National Register (Dobschuetz et al., 2004). A records search and survey of a 300-foot wide corridor performed by the EIR/EIS team along the entire North of Kofa Alternative route between December 13-19, 2005 found only four sites (one of which is a mine shaft that is probably modern) that would require evaluation to determine if they are eligible for the National Register (see the complete list under Environmental Disadvantages below). Therefore, overall the North of Kofa Alternative would be located in a less culturally sensitive area than the Proposed Project route through the Kofa NWR.

#### *Environmental Disadvantages*

**Additional Length and Ground Disturbance.** This route would be approximately 10 miles longer than the proposed route, which will affect the length and intensity of short-term construction impacts and ground disturbance, affecting air quality, noise, transportation and traffic, hazardous materials related to envi-

ronmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation.

In addition, the Proposed Project would be able to utilize existing access for access to new transmission towers. The North of Kofa NWR Alternative, however, would require additional access and spur roads which would result in permanent ground disturbance and corresponding loss of habitat.

Tables Ap.1-3a and Ap.1-3b (see Section 4.2.4) compare project components and impacts associated with the Proposed Project and the North of Kofa Alternatives. Note that the Proposed Project, overall, would result in substantially less acreage of new disturbance (the North of Kofa NWR Alternative would affect 127.6 acres of additional disturbance).

**New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs.

Table Ap.1-3b (see Section 4.2.4) presents a comparison of linear miles of impacts for each alternative that avoids Kofa NWR in areas of high resource value: desert tortoise habitat, bighorn sheep habitat and lambing grounds, recreational areas, and BLM Resource Management Plan restricted areas. Each of these topics is addressed below the table and is depicted on Figure Ap.1-2a in Volume 3 of this EIR/EIS.

**Biological Resources.** The EIR/EIS team completed a biological survey of the entire length of the North of Kofa Alternative on December 5-7, 2005. The following biological factors were considered and evaluated during the survey, including:

- Suitable habitat or presence of nine federally listed species protected under the Endangered Species Act (i.e., threatened, endangered, or candidate for La Paz County)
- Suitable habitat or presence of State listed wildlife species (i.e., Wildlife of Special Concern in Arizona [WSCA])
- Plants protected under the Arizona Department of Agriculture's (ADA) Arizona Native Plant Law
- Suitable habitat or presence of sensitive status species listed by the BLM that occur in the Yuma field office area
- Birds protected under the Migratory Bird Treaty Act
- ADA and BLM listed noxious weed species.

The results of the survey in regards to the above-mentioned biological regulations and concerns included the following resources:

- Suitable habitat for the Sonoran Desert tortoise (BLM sensitive and State WSCA) was identified along almost the entire route.



- Suitable habitat and suitable migratory habitat for the desert bighorn sheep was identified along the route within the Plomosa Mountains, and adjacent to the route north of the New Water Mountains and New Water Mountains Wilderness Area.
- Loggerhead shrikes, a BLM sensitive status bird, were observed near the southwest and southeast ends of the route.
- No special status bat species were observed; however, a few mineshafts were observed near the central portion of the route on BLM and private land.
- Several species of plants protected under the ADA Arizona Native Plant Law were observed along the route. Protection categories did not include any Highly Safeguarded plants.

Overall, this alternative would require disturbance of a 37-mile corridor that is relatively undisturbed at this time. A new access road would need to be constructed, following portions of existing unpaved or 4-wheel drive roads. In addition, disturbance would occur in areas with no existing access roads, such as mountain foothills. Bighorn sheep inhabit the mountainous areas of western Arizona and migrate through the foothills when moving from one area to another. When comparing this alternative route to the proposed route through the Kofa NWR, the same types of biological resources would be affected; however, the degree of effect would increase significantly when assessing impacts to the bighorn sheep due to the creation of a new corridor through undisturbed wilderness. The North of Kofa Alternative would pass through Game Management Unit (GMU) 44B South, which includes the Plomosa and New Water Mountains and has had a downward trend from 2002 to 2003. The alternative route would affect an area not currently crossed by a utility corridor, and would require disturbance of much more land than the proposed route.

**Cultural Resources.** The following four archaeological sites were identified and recorded during the records search on December 12, 2005 and survey performed by the EIR/EIS team on December 13-19 2005, including:

1. A historical-period can scatter with a filled-in mine shaft, located where Plomosa Wash crosses the project area. Some modern debris is present along with a trailer and modern wells that appear to still at times be in use;
2. A historical-period site approximately 0.5 miles north of Site #1, where Scaddan Wash intersects the project area. It consists of three terrace rock features and a light can scatter; where top terrace feature meets desert pavement, there is a rock foundation of uncertain function approximately 4 feet on a side;
3. Two rock rings, likely Native American in origin, south of the pot break (discussed under Site #5 below); and
4. A group of five mine shafts that are likely modern, although a historical-period tobacco tin was present nearby; the shafts are located south of the historical-period site at Plomosa Wash (Site #1).

Two other possible sites were recorded, that could either be designated sites or isolated occurrences; in either case, recording has exhausted their research potential. These possible sites include :

5. A prehistoric pot break consisting of approximately 100 sherds; and
6. A chipping station, with approximately 25 artifacts (secondary and tertiary flakes) of green quartzite, all from same cobble, in an area approximately 5 meters in diameter.

These two possible sites are most likely isolated occurrences and as such they would not be considered significant and no further investigations are necessary. Approximately 20 other isolated occurrences were

recorded, primarily cairns or mining test pits, as well as a few cans, flakes, and one core. As these do not qualify as sites, they cannot be considered significant and no further investigations are necessary.

**Visual Resources.** As the transmission line would diverge from the existing DPV1 ROW, the alternative would have potentially significant visual impacts resulting from the creation of a new utility corridor. The route would affect scenic views of the Plomosa Mountains and New Waters Mountains from I-10, as well as the potential future Dripping Springs ACEC.

#### Alternative Conclusion

**ELIMINATED.** This alternative would be feasible and would meet project objectives. The North of Kofa Alternative would avoid impacts to resources within Kofa NWR, would be less sensitive for cultural resources, and would eliminate policy inconsistencies associated with construction of a new transmission line on protected refuge land. However, the alternative would create a new corridor with associated ground disturbance (there are few usable access roads and the route would be 10 miles longer than the portion of the Proposed Project it would replace). As a result, it would result in substantially greater impacts to bighorn sheep and currently undisturbed biological resources, and would create potentially significant visual impacts through previously undisturbed land. Therefore, this alternative has been eliminated from detailed analysis.

### 4.2.7 SCE North of Blythe Alternative

#### Alternative Description

This alternative was included in SCE's 2005 PEA as Subalternate 2 (North of Blythe through Colorado Indian Reservation), which was considered and eliminated in PEA Section 3.1.2.1. The alternative is also a portion of Subalternate Route "P," which was evaluated in the DPV1 DEIS, in response to concerns regarding agricultural impacts in the Palo Verde Valley (Blythe area) for the proposed route. The North of Blythe Alternative would cross agricultural land and would pass through a portion of the Colorado River Indian Tribe (CRIT) Reservation. It would be 3.3 miles longer than the proposed route. According to SCE, this route would result in approximately 126 acres of more permanent ground disturbance than the proposed route. This alternative is illustrated in Figure Ap.1-3 (see enclosed CD).

Based on information provided on Subalternate 2 in SCE 1988 Amended PEA, the North of Blythe Alternative would depart the proposed DPV2 route approximately 1.5 miles west of Eagletail Mountains and 3 miles south of Salome Emergency Airfield. The route would then traverse in a northwesterly direction and approximately 9 miles from the point of departure from DPV2 would be the location of the series compensation facilities for this route. The route would then meet I-10 8 miles from the compensation facilities and would then parallel I-10. The route would continue in a northwesterly direction below Bear Hills, would cross I-10 and would pass along the southwesterly side of Bear Hills heading towards U.S. 60. The route would cross Arizona U.S. 60 approximately 4 miles northwest of the I-10 crossing. The route would continue in a northwesterly direction through the Plomosa Mountains and would then head westerly at the western edge of the Plomosa Mountains approximately 5 miles north of I-10. The route would cross Arizona State Highway 95 at a point 5 miles north of Quartzsite. It would then traverse through the Dome Rock Mountains and would pass through the CRIT Reservation heading towards the Colorado River.

After crossing the river the route would traverse approximately one mile of farmland and would then cross the main canal and California Highway 95 prior to heading in a southwesterly direction along the southern edge of the Big Maria Mountains. After traversing west to a point 4 miles north of Blythe Airport, the

route would turn in a southwesterly direction for approximately 7 miles, where it would cross I-10 and rejoin the proposed route one mile south of I-10.

**Potential Alternative Variation.** Because this alternative, as designed by SCE and illustrated in Figure Ap.1-3 (see enclosed CD), would rejoin the Proposed Project west of Blythe, use of the Midpoint Substation designated by SCE would not be possible. The North of Blythe Alternative could be used with either the Mesa Verde or Wiley Well Alternative Substation sites, but as noted in Section 4.2.11 below these two alternatives (suggested by SCE) have been eliminated from consideration in this EIR/EIS due to their greater impacts than the Midpoint Substation. Therefore, in order to ensure that this alternative was feasible, a substation location would have to be identified.

As suggested by the City of Blythe during scoping, this alternative could also be designed to pass adjacent to the existing power plant (BEP I) and approved (but not constructed) power plant (BEP II), within the City of Blythe. With this route modification, the alternative would follow the 6.7-mile corridor mostly adjacent to an existing Imperial Irrigation District (IID) 161 kV transmission line from Buck Boulevard Substation to Midpoint Substation where it would join the existing DPV1 and proposed DPV2 corridor. The 6.7-mile route has also been proposed for the Blythe Energy Project 230 kV Transmission Line Modifications (CEC, 2006).

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## Consideration of CEQA/NEPA Criteria

### *Project Objectives, Purpose, and Need*

The North of Blythe Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project.

### *Feasibility*

**Legal Feasibility.** According to SCE, the CRIT Tribal Council denied SCE a right-of-way for the DPV1 line in 1977, indicating that it would adversely impact the tribe. At the time of SCE's 1988 amended PEA, SCE stated that the CRIT indicated that a right-of-way would not be approved for the proposed DPV2 project.

**Regulatory Feasibility.** The Lower Gila RMP describes the following restrictions on overhead lines:

*The Interstate 10 corridor, because of resource concerns, will have a restriction regarding overhead lines. Due to the close proximity of important bighorn sheep waters and lambing grounds north of the Interstate and because of terrain features north of the Interstate, overhead transmission lines will not be allowed north of I-10 between townships 16W and 18W (BLM, 1985).*

This restriction on overhead power lines north of I-10 between townships 16W and 18W establishes an approximately 18-mile wide strip running north of I-10 (essentially to the northern boundary of the RMP approximately 17 miles north of I-10) through which overhead power lines cannot be built. The requirement for a plan amendment may not make the alternative infeasible, but it would add a series of regulatory requirements: (a) NEPA clearance of the plan amendment would be required; (b) public noticing would be required by filing in the Federal Register; (c) an extension of the Draft EIR/EIS public review period from 60 to 90 days; and (d) a 60-day Governor's Consistency Review following the publishing of the Final EIR/EIS. The Final EIR/EIS would also have to identify in its title that the EIR/EIS also evaluates a proposed Plan Amendment. It is not known at this time whether BLM would approve the required plan amendment; therefore, regulatory feasibility is not certain.

Overall this alternative would be technically feasible, but its legal feasibility would depend upon required approval of the CRIT. Regulatory feasibility is in question due to the required amendment of the BLM Resource Management Plan.

#### ***Environmental Advantages***

**Biological Resources, Recreation, Land Use and Visual Resources.** The North of Blythe Alternative would also avoid Kofa NWR. Please see discussion under these subsections of Section 4.2.4 above.

**Population and Land Use.** The Proposed Project would go through an area of generally higher population densities (an average of 35.34 people per square mile) compared to the North of Blythe Alternative for this segment, which would have only 9.9 people per square mile.

**Agricultural Resources, Erosion, and Soil Contamination.** This alternative would reduce agricultural impacts in the Palo Verde Valley, including reducing the compaction and erosion of agricultural lands and reducing potential construction disturbance of residual pesticides and herbicides in the agricultural land.

#### ***Environmental Disadvantages***

**Alternative Length and Ground Disturbance.** The North of Blythe Alternative would be 3.3 miles longer than the proposed route, which would increase the length and intensity of short-term construction impacts and ground disturbance, affecting air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. Overall, SCE states that 138 acres of permanent ground disturbance would occur with this alternative from where it would leave the DPV1 route to where it would rejoin the DPV1 ROW, compared to 11.7 acres for the equivalent portion of the proposed route (SCE, 2005a).

**New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1/DPV2 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs. An amendment to the RMP would be required in order for the BLM to grant approval of this alternative ROW (see discussion under Feasibility above). Finally, this new ROW may set precedent for future development of utilities in this corridor (future land use impacts).

**Biological Resources.** This alternative would pass through Arizona Game and Fish Department (AGFD) Game Management Units 44B (includes Plomosa Mountains) and 43A (includes Dome Rock Mountains), found to be bighorn sheep habitat with good and increasing populations since the mid-1990s, which was last surveyed for population in 2003. This alternative would create potentially significant impacts to high-quality bighorn sheep habitat, including a major movement corridor between Ibex Peak/Haystack Peak and Lazarus Tanks mountain block and nearby lambing areas in the north Plomosa Mountains. Because the North Plomosa lambing area is active, this alternative poses greater impacts to bighorn sheep than the Proposed Project, even though the proposed route passes through the Kofa NWR (Henry, 2005).

This alternative would increase disturbance and removal of vegetation by 126 acres. This could significantly increase the chance that special status species would be affected by the increase in disturbed area. Also, this increase in disturbed area could increase the chance of noxious weed introduction and also remove more native desert vegetation. The alternative would have greater impacts to vegetation in desert washes, especially between the McCoy and Big Maria Mountains and many smaller washes that braid through the bajadas adjacent to the mountains.

The North of Blythe Alternative has the potential for significant impacts on the desert tortoise. This route would be in BLM Category 2 and 3 Desert Tortoise habitats, as would the Proposed Project. This species likely occurs in the areas north of I-10, particularly near the base of the McCoy and Big Maria Mountains. The impacts to desert tortoise may be greater with this alternative than the Proposed Project because the route would traverse more native habitat than the Proposed Project. Without focused survey information, however, a definitive conclusion on the actual impacts to tortoises cannot be made.

Without focused surveys for burrowing owl, other special status plant and wildlife species, and listed plants, it is difficult to determine the impacts of this alternative on these species. This alternative appears to cross a larger acreage of native habitat than does the proposed route, however, so there may be a greater likelihood that there will be impacts to these species than with the Proposed Project.

**Agricultural Resources.** This alternative would cross agricultural land on the CRIT Reservation and would create potentially significant impacts to Prime Farmland in Parker Valley. The North of Blythe Alternative would cross approximately 1.25 miles of agricultural land north of the City of Blythe, a portion of which is categorized as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland). The North of Blythe Alternative would also run adjacent to and cross lands currently under Williamson Act contract. The route would run parallel to Williamson Act Prime contract lands in Section 33, Township 05 South, Range 23 East and would cross a small portion of a Williamson Act Prime contract in Section 19, Township 05 South, Range 24 East. Conversion of Farmland and Williamson Act contract lands due to the construction of transmission towers would be considered significant and potentially unmitigable impacts. This would be less, however, than the Proposed Project, which would cross 9.8 miles of agricultural lands, much of which would be categorized as Farmland and Williamson Act contract lands, and impacts to which would also be considered significant and potentially unmitigable. The North of Blythe Alternative would traverse only a quarter of the amount of Williamson Act contract lands compared to that crossed by the Proposed Project. While the types of impacts caused by the North of Blythe Alternative would be the same as those caused by the Proposed Project, the extent of impacts would be less than a quarter of the Proposed Project's impacts over the same portion of the route.

**Visual Resources.** The presence of the new line could create significant impacts in a new corridor in the northern portion of the Plomosa and Dome Rock mountains, in the Colorado River riparian area, and through agricultural land in the Palo Verde Valley. Impact to scenic values for views from I-10 with strong contrasts south of Bear Hill and west of Blythe Airport; State Route (SR) 95 in the La Posa Plains; U.S. 60 west of Brenda, Poston Road, and Midland Road; and U.S. 95 north of Blythe. Significant impact to residential views near Brenda and along the Colorado River (2005 PEA references 1988 PEA, p. 10-78-10-84).

This alternative would create new significant visual impacts as the transmission line converges on, parallels, and then crosses to the north side of I-10 and then crosses U.S. 60 southwest of Brenda. It would also result in substantial visual impacts to residents on the west side of Brenda. This alternative would also cause visual impacts (a) to the La Posa Designated Camping Area at the Plomosa Campground (viewing south), (b) on views from Arizona 95 at the crossing, and (c) to back-country recreationists accessing the Boyer Gap area. Further west, the North of Blythe Alternative would also cause significant visual impacts at the crossings of the Colorado River and U.S. 95. Visual impacts may also occur on

views from the Midland Long-term Visitor Area north of Blythe. Significant visual impacts would occur as the North of Blythe Alternative route crosses the southern end of the McCoy Mountains and then I-10, approximately four miles west of Mesa Verde.

While the North of Blythe Alternative would avoid the visual impacts on Kofa NWR and the adverse visual impacts on the La Paz Arroyo-Copper Bottom Pass area, this alternative would result in significant visual impacts at the crossings of U.S. 95 and the Colorado River that would be greater than the Proposed Project given the lack of similar infrastructure features in the vicinity of the northern crossings.

**Cultural Resources.** There would be greater impacts to cultural resources with this alternative, especially across the CRIT reservation. Consultation with tribal officials would be necessary and tribal approval of the route would be required.

The Proposed Project segment that would be replaced by this alternative includes 6 potentially NRHP-eligible archaeological sites: 2 prehistoric trails; 2 prehistoric temporary camps; 1 prehistoric cobble quarry with ceramic sherds; and 1 prehistoric and historic trail. The North of Blythe Alternative crosses substantially more cultural resources along its alignment. At McCoy Wash, the line proceeds east along the northern edge of Palo Verde Mesa, and parallels an existing transmission line along the southern flanks of the Big Maria Mountains where it crosses the Palo Verde Valley to the Colorado River and the Colorado River Indian Tribes (CRIT) Reservation. Beyond the political implications of crossing tribal lands, there would be very significant impacts to archaeological sites and sites of religious value to the CRIT. Most of the route parallels or coincides with previous corridor surveys, so that sites types and densities can be estimated fairly accurately. From the west to the east, until reaching the Big Maria Mountains, the route has low archaeological sensitivity (small discrete sherd or lithic scatters on sheet wash alluvial surfaces or between sand dunes). Towards the Colorado River and the Mule Mountains though, the corridor reaches the well-known Colorado River Geoglyphs. This is an area of extensive and complex ceremonial ground figures, trails, cleared circles, cairns, chipping stations, and habitation sites. Four of the geoglyph sites occur directly within this alternative, including a large spectacular and unique anthropomorphic geoglyph interpreted to be a dancing shaman holding a snake or lightning rod. This geoglyph and its associated chipping stations, cleared circles, sherd scatters, cairns, and other remains, along with many other geoglyphs along the river have been approved for NRHP as a Thematic District. Given the sacred nature of the sites along the northern alternative and the need to cross the CRIT Reservation, this alternative has much higher cultural resources sensitivity than the preferred route.

**Socioeconomics and Public Utilities.** The North of Blythe Alternative route would be approximately 3.3 miles longer than the Proposed Project. The additional distance would require additional water for dust suppression activities, but this additional requirement would not create significant impacts. The North of Blythe Alternative would be located away from the El Paso Natural Gas pipeline that traverses Kofa NWR, but would follow a portion of the Celeron/All American Pipeline. Although there is always potential for a collocation accident to disrupt utilities, it is unlikely that construction of either route would disrupt the adjacent pipeline.

**Roadway Crossings.** The transportation impacts of this potential alternative would be greater than the proposed route segment because it would require 2 additional crossings of Interstate 10 (I-10), one additional crossing of Arizona State Highway 60 (SR-60), and one crossing of California State Highway 95 (SR-95).

## Alternative Conclusion

**ELIMINATED.** This alternative would meet project objectives but would be legally feasible only if the CRIT would agree to the lines being placed on their land. The regulatory feasibility of the route is questionable, because BLM approval of an amendment to the Resource Management Plan would be required.

Although this alternative would eliminate biological, recreation, and visual impacts to Kofa NWR and would reduce the amount of agricultural land impacted by the Proposed Project, the alternative would result in greater impacts to biological resources and substantially greater impacts to visual and cultural resources. Overall, the North of Blythe Alternative would have more visual impacts than the Proposed Project segment that it would replace, because of the greater impacts on views from I-10, U.S. 60, dispersed recreation areas north of I-10 in Arizona, the Colorado River, and U.S. 95, as well as views of the McCoy Mountains west of Blythe. Given the sacred nature of the sites along the northern alternative and the need to cross the CRIT Reservation, this alternative has much higher cultural resources sensitivity than the Proposed Project. As a result of greater impacts to visual, cultural, and biological resources, this alternative was eliminated from further consideration in this EIR/EIS.

## 4.2.8 SCE South of Blythe Alternative

### Alternative Description

The South of Blythe Alternative would begin 2 miles south of the city of Blythe and would cross the Palo Verde Valley in California, about 10 miles south of the DPV1 route, crossing through a portion of Imperial County (see Figure Ap.1-4 on enclosed CD). This alternative was included in SCE's 2005 PEA as Subalternate 3 (South of Palo Verde Valley through Imperial County Subalternate). It was not evaluated in for the DPV1 line, but was considered as an alternative for the 1985 DPV2 project (1985 PEA) in response to concerns regarding agricultural impacts in the Blythe area.

The alternative route would depart from the proposed DPV2 route 0.5 miles east of the Colorado River and would head southwest for approximately 14 miles. In this segment the route would parallel the Colorado River. Located approximately 5 miles southwest of the Proposed Project, this alternative would cross within 0.25 miles of the northwest corner of Yuma Proving Ground. One mile north of the Cibola National Wildlife Refuge, the route would turn west, cross the Colorado River into Imperial County, California (about 10 to 12 miles south of the existing DPV1 crossing), and would traverse farmland in the southern Palo Verde Valley. The route would continue west 1.5 miles from the Colorado River and would then turn in a northwesterly direction for approximately 15 miles towards the proposed route, crossing into Riverside County and then through the Mule Mountains. This alternative would rejoin the Proposed Project approximately 1.5 miles south of I-10 and 15 miles west of Blythe (note that this alternative would rejoin the DPV1 route west of the location of the Midpoint and Mesa Verde Substation sites [see Section 4.2.10 below]).

The South of Blythe Alternative would be 11.5 miles longer than the proposed route. The alternative would cross 4 miles of farmland, which would be less than the 10 miles of farmland on the proposed route.

## Consideration of CEQA/NEPA Criteria

### *Project Objectives, Purpose, and Need*

The South of Blythe Alternative would increase California's transmission import capability from the Southwest and would enhance and support the competitive energy market in the Southwest. Therefore, this alternative would meet all of the stated objectives of the Proposed Project.

### *Feasibility*

**Legal and Technical Feasibility.** The South of Blythe Alternative would be technically and legally feasible.

**Regulatory Feasibility.** Amendments to applicable BLM management plans would not be required because the route would not go through a planning area that prohibits transmission lines, even though the South of Blythe Alternative route would be outside of an established BLM utility corridor. Applicable plans are the Lower Gila North Management Framework Plan and the Lower Gila South Resource Management Plan (Arizona) and in California the Northern and Eastern Colorado (NECO) and the California Desert Conservation Area (CDCA) Plans. Therefore, BLM has the authority to permit South of Blythe Alternative route with NEPA clearance, for which this EIR/EIS would be sufficient. Overall this alternative would be technically, legally, and regulatorily feasible.

Because of the location at which this alternative would rejoin the Proposed Project (approximately 1.5 miles south of I-10 and 15 miles west of Blythe), the South of Blythe Alternative could only be used with the Wiley Well Alternative Substation site. This alternative substation site has been eliminated from consideration as described in Section 4.2.10.2 below. Therefore, identification of an appropriate substation for connection to the DSWTP would be required if this alternative were carried forward for analysis. Because the South of Blythe Alternative has been eliminated due to environmental reasons (see below), further investigation into an alternative substation site was not pursued.

### *Environmental Advantages*

**Biological Resources.** By affecting 6 miles less agricultural land than would the proposed route, there would also be less of a likelihood of disturbing burrowing owls and their habitat. However, note that more significant biological disadvantages are discussed below.

**Population and Land Use.** The Proposed Project would go through an area of higher population densities (an avg. of 35.34 people per square mile) compared to the South of Blythe Alternative for this segment, which would have only 0.46 people per square mile.

**Agricultural Resources, Erosion, and Soil Contamination.** The alternative route would cross the Palo Verde Valley south of Blythe area thereby impacting four miles of farmland, which would be six miles less than the ten miles of farmland along the proposed route. Reducing agricultural impacts in the Palo Verde Valley would also reduce the compaction and erosion of agricultural lands and the potential disturbance of soils containing residual pesticides and herbicides in the agricultural land.

### *Environmental Disadvantages*

**Alternative Length and Ground Disturbance.** The South of Blythe Alternative would be 11.5 miles longer than proposed route, which would increase the length and intensity of short-term construction impacts and ground disturbance, affecting air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, water use for dust suppression, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and



wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. The route would also cross several sizeable desert washes in the area of the Mule Mountains between the agricultural areas south of the Palo Verde Valley and the western junction with the Proposed Project. In addition there are many smaller washes that braid through the bajadas adjacent to the mountains, which could be disrupted by construction.

**New Transmission Corridor.** This alternative would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1/DPV2 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs. Amendment would be needed in order for the BLM to grant approval of this alternative ROW (see discussion under Feasibility above).

**Biological Resources.** Near the Colorado River crossing, this route would also be only 1.5 miles from the Cibola Wildlife Refuge where there is an abundance of waterfowl, proposed critical habitat for the southwestern willow flycatcher (SWWFL), and suitable habitat for the Yuma clapper rail (YCR). This route would parallel the Colorado River for approximately 16 miles, which could lead to more impacts to the abundant waterfowl or federally listed species (YCR and SWWFL). More bird collisions with the conductors at the river crossing would be likely to occur due to this route's proximity to the Colorado River (i.e., waterfowl habitat).

Although focused surveys have not been completed for this alternative, there would also be potentially greater desert tortoise impacts, because the alternative may traverse a greater amount of native habitats. The desert tortoise likely would occur in the native habitat areas (probably in low numbers) located west of the agricultural areas of Blythe to the western junction with the route of the Proposed Project. Without focused surveys for burrowing owl, other special status plant and wildlife species, and listed plants, it is difficult to determine what the impacts of this alternative will be on these species. But, this alternative appears to cross a larger acreage of native habitat than does the proposed route, so there may be more likelihood that there will be impacts to these species than with the Proposed Project.

**Recreation.** The South of Blythe Alternative would be located south of the proposed route, and would create a new transmission line corridor across the southwestern edge of the Mule Mountains ACEC, which is a sensitive natural area that would be avoided by the Proposed Project. The route would also be parallel to the Colorado River along a great length of the river, where recreational use of the river is common (see discussion under Visual Resources, below).

In addition, hikers, ORV, and recreational users along the Bradshaw Trail (located in southeastern Riverside County and Imperial County near the Mule Mountains) would be potentially impacted by this alternative. The Bradshaw Trail, Riverside County's first road, was blazed by William Bradshaw in the gold rush of 1862 as an overland stage route beginning at San Bernardino and ending at La Paz, Arizona (now Ehrenberg, Arizona). Today, the east-west trail is a 65-mile graded road that traverses mostly BLM land parallel to I-10 to the south and begins approximately three miles north of the community of North Shore near the Salton Sea State Recreation Area (near Dos Palmas, California). The eastern end of the trail is two miles southwest of the community of Ripley near the Colorado River. The trail crosses about 18 miles southwest of Blythe, California.

**Visual Resources.** As the transmission line diverges south from the Proposed Project route at the Colorado River, this alternative would create new significant visual impacts. Views from the East Levee Road,

which is parallel to the route and adjacent to the Colorado River, would be adversely affected, as would some views from the Colorado River (depending on tower placement). Adverse visual impacts would also occur at the BLM Oxbow Recreation Site and Imperial County Palo Verde Park (all near the Colorado River crossing). This alternative may also cause additional visual impacts on residences near the Colorado River crossing and on views from the Colorado River at the crossing.

**Cultural Resources.** While the area in and around the South of Blythe Alternative has not been subjected to detailed archaeological surveys, the area's sensitivity for cultural resources can be projected from adjacent areas. The southern Palo Verde Valley agricultural lands have little potential for significant resources because of alluviation of sites and extensive agricultural disturbance. However, the alignment would cross about 12 miles of heavily dissected terraces parallel to the Colorado River floodplain. Surveys on the California side, in similar flat mesa settings, have revealed many sites ranging in age from 8,000 years to the late prehistoric period. Site types include cleared circles, rock rings and alignments, chipping stations, quarries, ceremonial geoglyphs, and trails with associated pot drops and artifact scatters. Similar types of sites, in high density, would be predicted for the Arizona side, including crossing through the Ripley Intaglio<sup>11</sup> and two other major intaglio groups.

### Alternative Conclusion

**ELIMINATED.** This alternative would meet project objectives and would be feasible, although a different substation location for the connection to the DPV corridor would have to be defined. Even though impacts to agricultural land would be reduced, the overall impact resulting from ground disturbance would be greater and the route would establish a new transmission corridor. The route would traverse much more sensitive biological habitat near the Colorado River and Cibola Wildlife Refuge. The South of Blythe Alternative would cause greater visual impacts on views from (a) the Colorado River and East Levee road, (b) the BLM Oxbow Recreation Site, and (c) Imperial County Palo Verde Park. The South of Blythe Alternative also has a much higher cultural sensitivity than the proposed route especially to geoglyphs, circles, and alignments of special value to the Native Americans in the Ripley Intaglio and two other major intaglio groups and in the Colorado River terraces (on Arizona side of the river), Mule Mountain ACEC, and the Palo Verde Mesa. As a result of much greater visual, land use, biological resources, recreation, and cultural resources impacts than the Proposed Project, this alternative was eliminated from further consideration in this EIR/EIS.

## 4.2.9 Alligator Rock Alternatives

There are three potential reroutes around the Alligator Rock area that may reduce impacts to cultural resources; they are described in the following sections. A fourth route is addressed in Section 3.2.1.11 and was eliminated after preliminary screening. The Alligator Rock alternatives are illustrated in Figure Ap.1-5 (see enclosed CD).

### 4.2.9.1 Alligator Rock-North of Desert Center Alternative

#### **Alternative Description**

Approximately 5 miles east of Desert Center (between MPs 149 and 150), the Alligator Rock-North of Desert Center Alternative route would diverge from the Proposed Project route and would head northwest for approximately 1.5 miles before crossing I-10 to the north and continuing for 1.1 miles to an unnamed

<sup>11</sup> An intaglio is a large ground drawing created by removing the pebbles that make up desert pavement. These rock alignments, which are sacred to many Native Americans, are usually in the outline of animals or human-like figures and are mostly found on mesas along the Colorado River.

## Alternative Conclusion

**ELIMINATED.** The Underground Alternative would meet the project objectives and three of the four technologies would be feasible. Although the ranking of the four technologies is subjective, based on cost and system simplicity, the initial ranking of the technologies would be as follows: XLPE, SCFF, HPFF, and CGTL. Note that SCFF and HPFF technologies may be largely similar depending on the specifics for a given alternative; however, HPFF requires a more intensive construction/development process.

If a short underground segment were considered (e.g., to avoid a specific high impact area), these technologies may not be cost prohibitive to construct. However, all underground construction of transmission lines requires a continuous trench in which to install duct banks that would carry the electrical cables. This amount of trenching would create significant impacts to soils/erosion, cultural resources, biological resources as well as a longer construction time and the need for transition structures. Operational impacts would also be greater associated with maintenance and access to the lines. Repair times would be much longer as well. With the exception of permanent visual resource impacts that would be eliminated, underground construction would cause much greater impacts to most issue areas than the Proposed Project. Therefore, given the potential for increased significant environmental impacts associated with the construction, operation and maintenance of an underground 230 kV or 500 kV transmission line, the unproven reliability for long-distance underground 500 kV transmission lines, the reliability concerns associated with the steep slopes and the active fault crossing, and the high cost of these technologies, undergrounding the transmission line has been eliminated from further analysis.

## 4.5 Non-Transmission Alternatives

SCE considered several supply-side and demand-side alternatives to DPV2. Supply-side alternatives include new generation, both conventional and renewable. Demand-side alternatives include additional demand response and energy efficiency. Distributed generation was also considered, as well as the no-project alternative.

SCE concurs with the CAISO (2005) that both generation and transmission options need to be pursued to meet future customer demand. SCE does not rely entirely on one or the other, but rather a portfolio that integrates both. Generation and transmission options have differing attributes that help meet the needs of a load-serving entity. For example, generation provides local-area reliability such as voltage support and black/quick-start, whereas transmission provides access to multiple generators and enhances liquidity in the market and market competition.<sup>27</sup> Both options are necessary, and DPV2 is the specific transmission project that is being considered here.

Some of the alternatives discussed below are resource options SCE is aggressively pursuing<sup>28</sup> to meet the demands of its customers and southern California in general. As shown by the "in-out" analysis,<sup>29</sup> these resources are complimentary to the future benefits of DPV2 and therefore, SCE does not consider them to be substitutes or alternatives. Nevertheless, all of the non-transmission alternatives were eliminated from consideration because they do not meet the project's objectives of (1) increasing access to low-cost, surplus generation in the Southwest by adding 1,200 MW of transmission import capability into California and reducing energy costs in California; (2) enhancing competition among generating companies supplying energy to California; (3) providing additional transmission infrastructure to support and provide an incentive for the development of future energy suppliers selling energy into California; and (4)

<sup>27</sup> DPV2 does not preclude the development of new generation.

<sup>28</sup> SCE prioritizes its resource considerations consistent with the Energy Action Plan's "loading order."

<sup>29</sup> A more detailed discussion may be found in Appendix G of SCE's PEA.

providing increased reliability of supply, insurance value against extreme events, and flexibility in operating California's transmission grid.

#### 4.5.1 New Conventional Generation

##### Alternative Description

New power generation facilities could be developed in southern California as an alternative to the Proposed Project. The specific configuration of new generation would vary depending on a number of uncontrollable factors (e.g., need, market forces), but the new facilities would likely be installed in a location with convenient and economical access to fuel supplies, existing transmission facilities, major existing substations, and load centers. Construction and operation of new generation facilities would be subject to separate permitting processes that would need to be completed in advance of construction. At this point, it is assumed that SCE would need to take an integrated approach to procure 1,200 MW of power for its customers before 2009 under this alternative.

For the New Conventional Generation Alternative, it is assumed that the most likely method of providing new power generation would be through the construction of combined cycle natural gas-fired turbine power plants. This, however, does not preclude the potential use of alternative energy technologies such as renewable resources, which are discussed in a separate section below.

Possible locations for new power generation facilities are illustrated on Figure Ap.1-12 (see enclosed CD). For the purposes of this analysis, new generation facilities are assumed to be the following:

- **Near the Devers Substation.** A new power plant could be developed similar to the 456 MW Ocotillo Energy Project, which was proposed by InterGen in May 2001 but never approved for construction, or an expanded generation facility could be installed at the 135 MW Indigo Energy Facility operated by Wildflower LLP near to the Devers Substation.
- **Near the Etiwanda Substation.** Etiwanda is northwest of the Vista Substation. New facilities could be installed at or near the 770 MW Etiwanda Generating Station (currently owned by Reliant Energy) or that facility could be repowered to create a state-of-the-art facility.
- **Near the Valley Substation.** New or expanded generation could occur at the Inland Empire Energy Center, now under construction. The Inland Empire Energy Center was originally proposed by Calpine Corporation in August 2001 and approved for 810 MW in June 2005.

##### Consideration of CEQA/NEPA Criteria

##### *Project Objectives, Purpose, and Need*

The New Conventional Generation Alternative would enhance competition among generating companies supplying energy to California and the power supply within California would be increased. However, new conventional generation would not increase California's transmission import capability from the Southwest, and it would not provide additional transmission infrastructure for energy suppliers selling energy into California energy markets. Therefore, this alternative would not meet all of the stated objectives of the Proposed Project.

Building new generation would not provide the transmission upgrades of the Proposed Project, and as such, building new generation, either conventional or renewable, would not be comparable to an economic transmission line such as Proposed Project. Economic transmission lines provide access to many generators and facilitate a robust transmission system. SCE anticipates that DPV2 would not only allow for interconnection of new generation resources to the transmission grid but also provide for flexible

delivery alternatives and increase access to a greater number of power generators. DPV2 also would provide load-serving entities, such as SCE, to procure short-, medium-, and long-term contracts with existing generation. Such flexibility in contracting would probably not be realized under the New Conventional Generation Alternative because new generating plants in southern California would likely require long-term contracts to meet financing requirements to be built and would likely have their full output secured through the contracts. Under this alternative, these generating plants would not be as likely to participate in short-term energy markets and produce the enhanced competition that SCE expects to facilitate with DPV2.

The economics of building new generation outside of California, and especially in the Palo Verde area, have historically been lower relative to new generation in southern California due to the following factors:

- Lower cost of delivered natural gas
- Lower labor rates
- Lower cost for bulk materials purchased locally (including State taxes)
- Lower costs for emissions offsets/credits
- Lower land costs.

These trends will likely continue into the future providing a continued economic incentive for developers of new generation outside of California.

### ***Feasibility***

**Technical and Legal Feasibility.** Developing new conventional generation in southern California is feasible from a technical standpoint. This has been demonstrated by merchant power plant developers and other public utilities in the region that have successfully developed power plants recently to achieve economic gains.

Investor-owned utilities such as SCE have not recently pursued development of new conventional power plant facilities because of the capital requirements and the financial risk involved. SCE believes it is not in a position to make long-term financial commitments in generation due to uncertainty surrounding the SCE customer base, which could be diminished by direct access and municipalization trends, and the creditworthiness and financial condition of SCE, which were severely damaged in 2000 and 2001 (PEA Appendix G-2, Section III(A)(2); SCE, 2005). In addition, SCE could not develop a power plant without first getting CPUC approval on ratemaking, which would create project uncertainty. As such, this alternative is considered to be feasible, but not economically viable with SCE as a developer.<sup>30</sup>

**Regulatory Feasibility.** The development of gas-fired power plants in southern California requires compliance with strict air quality regulations, governed by the South Coast AQMD. Mitigation requirements are extensive, requiring purchase of emission offsets and other requirements. However, these requirements have been met by several power plants, so compliance is considered to be feasible.

### ***Environmental Advantages***

The construction and operation of major power plants in southern California could eliminate the impacts associated with construction of the DPV2 transmission project. These impacts, detailed in Section D of

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<sup>30</sup> There is a power facility currently proposed and under consideration by the California Energy Commission near the Valley Substation: the Sun Valley Power Project. This plant was proposed by a subsidiary of Edison International: Edison Mission Energy. Edison International is a parent company of both SCE and EME.

this EIR/EIS, include visual impacts, loss of biological habitat or cultural resources, and a wide range of construction impacts along the nearly 300-mile length of the transmission project.

### ***Environmental Disadvantages***

Major power plants require permanent loss of 20 or 30 acres of land, construction of varying length of transmission lines to connect with existing facilities, and construction of pipeline connections for natural gas and water. Construction impacts are generally contained near the plant itself, but operational impacts can be more regional. Air emissions from burning of fossil fuels to generate power occur during the life of the plant, and the plant facilities can be visible from large distances. Depending on technologies used, power plants can consume large amounts of water.

### **Alternative Conclusion**

**ELIMINATED.** The New Conventional Generation Alternative would not satisfy the following project objectives: adding transmission import capability into California and providing access to low-cost energy, providing additional transmission infrastructure, and improving the reliability and flexibility of the region's transmission system. The long-term operational environmental impacts of power plants (i.e., air emissions, water usage) can be balanced against the impacts of long transmission lines. Because the new generation alternative does not meet the project's objectives, it is eliminated from further evaluation.

## **4.5.2 Renewable Generation Resources**

### **Background**

Aggressive efforts are now being made to increase the renewable resource component of California's generation supply. In the year 2002, California had over 7,000 MW of renewable energy capacity, including solid-fuel biomass, geothermal, wind, small hydroelectric plants (30 MW or less), concentrating solar power (CSP), photovoltaic systems (PV), landfill gas, digester gas, and municipal solid waste (MSW) facilities.

In 2004, SCE procured more than 13,000 gigawatt-hours of renewable energy, more than any U.S. utility and enough to power almost 2 million homes for an entire year. In 2004, more than 18 percent of the power SCE delivered to the 13 million Californians it serves came from renewable energy sources. SCE's current renewable portfolio can deliver 2,588 MW of electricity, including: 1,021 MW from wind; 892 MW from geothermal; 354 MW from solar; 226 MW from biomass; and 95 MW from small hydroelectric power (Stirling Energy, 2005).

**Senate Bill 1038 (SB 1038).** SB 1038 took effect January 1, 2003, and is codified in the Public Utilities Code (PUC). This bill required the California Energy Commission (CEC) to submit a comprehensive renewable electricity generation resource plan to the State Legislature, describing the potential renewable resources available in California. Additionally, SB 1038 required the CEC to develop a plan to increase the annual amount of electricity generated from renewable resources. The transmission plan (Plan) for renewable electricity generation facilities to meet California's renewable energy goals was submitted to the CPUC on December 1, 2003, pursuant to Public Utilities Code Section 383.6. The Plan has two sections: a policy text that describes key issues emerging from the development of the Plan, and a Transmission Plan detailing the transmission line and substation additions and modifications necessary to attain the legislative target of 20 percent renewable power generation by 2017 (see SB 1078, below).

**Senate Bill 1078 (SB 1078): California Renewables Portfolio Standard Program.** The Renewables Portfolio Standard (RPS) was established in 2002 by SB 1078. Pursuant to SB 1038, the RPS requires

investor-owned utilities, including retail sellers of electricity such as SCE, to increase their sale of electricity produced by renewable energy sources (such as wind) by at least 1 percent per year, achieving 20 percent by 2017, at the latest. Subsequent to the RPS, the Energy Action Plan was adopted by the CPUC, CEC, and the Consumer Power and Conservation Financing Authority (CPA — which is now defunct). The Energy Action Plan established a target of 20 percent renewables by 2010 (CEC, 2003), which is a more aggressive goal than the previous SB 1038 goal of 20 percent by 2017. The RPS legislation requires that the CPUC and CEC work collaboratively to implement the RPS and assigns specific roles to each agency. Pursuant to SB 1078, the CEC's responsibilities include:

- Certifying eligible renewable resources that meet criteria contained in the bill, including those generating out-of-state
- Designing and implementing a tracking and verification system to ensure that renewable energy output is counted only once for the purpose of the RPS and for verifying retail product claims in California or other states
- Allocating and awarding supplemental energy payments as specified in SB 1038 to eligible renewable energy resources to cover above-market costs of renewable energy.

The CPUC is addressing its responsibilities in implementing the RPS through a separate proceeding titled, Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development (R. 01-10-24). The CPUC's responsibilities include:

- Establishing a process to determine market price referents, setting the criteria for IOU ranking of renewable bids by least cost and best fit, and establishing flexible compliance rules, penalty mechanisms and standard contract terms and conditions
- Establishing initial renewable generation baselines for each IOU, making subsequent changes to these baselines as needed, and determining annual procurement targets (APTs)
- Directing the IOUs to develop procurement plans, and approving, amending or rejecting the plans
- Making specific determinations of market price referents for products under contract
- Approving or rejecting IOU requests to enter specific contracts for renewable power, including determining if a solicitation was adequately competitive
- Factoring transmission and imbalance costs into the RPS process and identifying the transmission grid implications of renewable development
- Defining rules for the participation of renewable Distributed Generation (DG), Electric Service Providers (ESP), Community Choice Aggregators (CCA), and potential Procurement Entities.

The CPUC and the CEC have developed a schedule for addressing RPS issues, and have established guidelines for how the two agencies work collaboratively on the RPS. The schedule and collaborative process are described in the CEC's Committee Order on RPS Proceeding and CPUC's Collaborative Guidelines. The Order also describes administrative procedures for interested parties who wish to participate in the CEC's RPS proceeding.

**Energy Action Plan.** In 2003, the three key energy agencies in California, the CEC, the California Power Authority (CPA), and the CPUC, came together in a spirit of unprecedented cooperation to adopt an

"Energy Action Plan" (EAP)<sup>31</sup> that listed joint goals for California's energy future and set forth a commitment to achieve these goals through specific actions.

The EAP was a living document meant to change with time, experience, and need. The CPUC and the CEC have jointly prepared the Energy Action Plan II (EAP II) to identify the further actions necessary to meet California's future energy needs.<sup>32</sup> Other active participants in the process include: the Business, Transportation, and Housing Agency; the Resources Agency; the State and Consumer Services Agency; the California Independent System Operator (CAISO); the California Environmental Protection Agency (Cal EPA); and other agencies with energy-related responsibilities.

EAP II describes a coordinated implementation plan for State energy policies that have been articulated through the Governor's Executive Orders, instructions to agencies, public positions, and appointees' statements; the CEC's Integrated Energy Policy Report (IEPR); CPUC and CEC processes; the agencies' policy forums; and legislative direction. This document also is intended to be consistent with the energy policies embodied in the Governor's August 23, 2005, response to the 2003 and 2004 IEPRs.<sup>33</sup> The agencies expect to update or revise this action plan to reflect any changes needed to further implement the Governor's 2004 IEPR response, future energy policies, and decisions related to the forthcoming 2005 IEPR, as well as other relevant events that may arise in the future.

The EAP II's overarching goal is for California's energy to be adequate, affordable, technologically advanced, and environmentally sound. The State will achieve these goals by taking specific and measurable actions throughout California's energy sector. The three energy sectors include: fuels used in the transportation of California's goods and population, electricity, and natural gas. EAP II further expands the scope of the original EAP to describe research, development and demonstration activities that are critical to realizing California's energy goals. In addition, EAP II highlights the importance of taking actions in the near term to mitigate California's contributions to climate change from the electricity, natural gas and transportation sectors.

EAP II continues the strong support for the loading order — endorsed by Governor Schwarzenegger — that describes the priority sequence for actions to address increasing energy needs. The loading order identifies energy efficiency and demand response as the State's preferred means of meeting growing energy needs. After cost-effective efficiency and demand response, renewable sources of power and distributed generation, such as combined heat and power applications, are next. To the extent efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, the EAP II supports clean and efficient fossil-fired generation. Concurrently, the bulk electricity transmission grid and distribution facility infrastructure must be improved to support growing demand centers and the interconnection of new generation, both on the utility and customer side of the meter. The EAP II pledges to remove the remaining barriers to transparency in the electricity resource procurement processes in the State and to increase outreach to consumers by providing improved education and services regarding energy efficiency, demand response, rates, climate change, and opportunities to reduce the environmental impacts of energy use. The EAP II is intended as an implementation roadmap for the entire State. The next step will be to prepare a workplan that ascribes

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<sup>31</sup> The Energy Action Plan (EAP) I can be viewed at the CPUC's website at <http://www.cpuc.ca.gov/PUBLISHED/REPORT/28715.htm> or at the CEC's website at [http://www.energy.ca.gov/energy\\_action\\_plan/2003-05-08\\_ACTION\\_PLAN.PDF](http://www.energy.ca.gov/energy_action_plan/2003-05-08_ACTION_PLAN.PDF).

<sup>32</sup> The Consumer Power and Conservation Financing Authority was a co-agency in EAP I. Funding for the agency was eliminated in SB 1113 (Chesbro) Chapter 208, the 2004-2005 budget. No additional funding is proposed in the Governor's 2005-2006 budget.

<sup>33</sup> Governor Schwarzenegger's "Review of Major Integrated Energy Policy Report Recommendations" in his August 23, 2005, letter to Senator Don Perata, President pro tempore of the California State Senate.



responsibility for each of these key action items, determines the specific roles that will be played by each agency, and develops a timeline that ensures the agencies' prompt attention.

**Integrated Energy Policy Report (IEPR).** Senate Bill 1389 (SB 1389, Bowen and Sher, Chapter 568, Statutes of 2002) requires the CEC to adopt an IEPR every two years. Despite improvements in power plant licensing, enormously successful energy efficiency programs, and continued technological advances, development of new energy supplies is not keeping pace with the State's increasing demand. Construction of new power plants has lagged and the number of new plant permit applications has decreased. In addition, the development of new renewable resources has been slower than anticipated, due in part to the State's complex and cumbersome Renewable Portfolio Standard process. In the transportation sector, California's refineries cannot keep up with the mounting need for petroleum fuels and consequently depend upon increasing levels of imports to meet the State's needs.

California's energy infrastructure may be unable to meet the State's energy delivery needs in the near future. The most critical infrastructure issue is the State's electricity transmission system, which has become progressively stressed in recent years. The systematic under-investment in transmission infrastructure is reducing system reliability and increasing operational costs. Last year, transmission congestion and related reliability services cost California consumers over \$1 billion. The State also experienced price spikes and several local outages over the past summer. California's petroleum import and refinery infrastructure also faces challenges including the inherent conflict between the need to expand import, refining, and storage facilities to meet transportation fuel demands and the environmental and social concerns of local communities affected by these needed expansions. In the natural gas sector, California has made infrastructure improvements that will increase the reliability and operational flexibility of the natural gas system, but must still address the need for additional pipeline capacity to meet peak demand.

In the 2003 IEPR and the 2004 IEPR Update, the CEC recommended a broad range of strategies to reduce energy demand, secure additional energy supplies, move toward more sustainable technologies and fuel types, and build the necessary infrastructure to protect California from future supply disruptions and high prices. The EAP II, adopted earlier this year by the CEC and the CPUC, sets out a series of concrete actions for the State to undertake to meet these challenges. The State must reinforce its commitment to these efforts and take immediate action to address problems in the energy sector to meet the State's policy goal of ensuring adequate, affordable, reliable, and environmentally sound energy services for its citizens.

The CEC's 2003 IEPR recommended accelerating the goal of 20 percent by 2017 to 2010, and the 2004 IEPR Update further recommended increasing the target to 33 percent by 2020. However, the IEPR stated that the current process for procuring renewable resources is overly complex and cumbersome, hobbling the State's ability to achieve its renewable goals (CEC, 2005b).

**SCE Renewable Conceptual Transmission Plan.** SCE developed the first version of its "Renewable Conceptual Transmission Plan" (RCTP) in accordance with the "Scope of Work" described by the CPUC in a March 27, 2003, ruling. The plan describes all SCE conceptual transmission upgrades and their estimated costs that are needed to connect all renewable energy resources in the SCE and Imperial Irrigation District (IID) territories. The identified upgrades would generate 470 MW of renewable resources in 2005, 1,755 MW of renewable resources by 2008, 4,220 MW of renewable resources by 2017, and 6,270 MW of renewable resources under "remaining potential."

### Alternative Description

The 2005 IEPR published by the CEC stated that in 2004, 10.2 percent of the State's electricity came from renewable sources, excluding large hydroelectric power (CEC, 2005b). The CEC estimates in the

2005 IEPR that the State has near-term economic potential for an additional 6,000 MW of renewables which, if developed, would nearly double California's renewable generating capacity. The principal renewable electricity generation technologies that could serve as alternatives to the Proposed Project and do not burn fossil fuels are geothermal, solar, hydroelectric, wind, and biomass.

**Geothermal.** Geothermal technologies use steam or high-temperature water (HTW) obtained from naturally occurring geothermal reservoirs to drive steam turbine/generators. Geothermal plants must be built at a geothermal reservoir site and typically require about 0.5 acres/MW (600 acres for 1,200 MW). The technology relies on either a vapor dominated resource (dry, super-heated steam) or a liquid-dominated resource to extract energy from the HTW. Geothermal is a commercially available technology, but it is limited to areas where geologic conditions result in high subsurface temperatures. There are no geothermal resources in the project vicinity, making this technology an infeasible alternative without substantial transmission infrastructure.

California's Imperial Valley contains 1,950 MW of geothermal power reserves; however, very little transmission capacity is currently available to export such additional generation to the San Diego or Los Angeles areas, as would be required under the Proposed Project. The Imperial Valley Study Group (IVSG) was a voluntary planning collaborative made up of regional stakeholders, such as the CPUC, CEC, and SCE, among others. Its mission was to evaluate and recommend regional transmission solutions that meet threshold requirements for reliability, least cost development and for minimizing environmental impact. The IVSG has recommended a three-phased plan for the development of the transmission necessary to export 2,200 MW of renewable generation (both geothermal and solar) from the region. These solutions cross control area boundaries and require coordination among several transmission owners, Load Serving Entities, regulatory and government agencies and other interests (IVSG, 2005).

**Biomass.** Biomass generation uses a waste vegetation fuel source such as wood chips (the preferred source) or agricultural waste. The fuel is burned to generate steam. California has approximately 1,000 MW of biomass-generated electricity, including some 600 MW from solid-fuel biomass (residues from forestry and agriculture) and about 400 MW from other sources such as landfill gas, biogas from wastewater treatment, direct burning of municipal solid waste, and anaerobic digestion of livestock manure (CEC, 2005b). Biomass facilities generate substantially greater quantities of air pollutant emissions than natural gas burning facilities, though these emissions may be partially offset by the reduction in emissions from open-field burning of these fields. In addition, biomass plants are typically sized to generate less than 20 MW, which is substantially less than the capacity of the 1,200 MW.

**Solar.** Currently, there are two types of solar generation available: solar thermal power and photovoltaic (PV) power generation. Solar thermal power generation uses high temperature solar collectors to convert the sun's radiation into heat energy, which is then used to run steam power systems. Solar thermal is suitable for distributed or centralized generation, but requires far more land than conventional natural gas power plants. Solar parabolic trough systems, for instance, use approximately five acres to generate one megawatt.

Photovoltaic (PV) power generation uses special semiconductor panels to directly convert sunlight into electricity. Arrays built from the panels can be mounted on the ground or on buildings, where they can also serve as roofing material. Unless PV systems are constructed as integral parts of buildings, the most efficient PV systems require about four acres of ground area per megawatt of generation.

California is a leader in the installation of solar photovoltaic (PV) systems, with more than 130 MW of rooftop PV systems installed since 1981. Since taking office in 2003, Governor Schwarzenegger has indicated strong support for solar energy development, initially by proposing to make half of all new homes built in the State solar-powered and then by proposing a goal of 1 million solar roofs in California by

2018 (CEC, 2005b). In his response to the CEC's 2003 IEPR and 2004 IEPR Update, the Governor reinforced the goal of a million solar roofs by outlining principles to be used to achieve that goal. As a further indication of his commitment to solar energy, the Governor recently signed a law that would promote the installation of PV generation in open spaces above and along 660 miles of open canals and pipelines on the State Water Project.

The CEC and the CPUC are working together to develop a unified PV program and a draft decision from the CPUC was released on November 15, 2005 (Rulemaking 04-03-017). An Interim Order was released by the CPUC under Commissioner Michael Peevey and ALJ Kim Malcolm on December 13, 2005 and the CPUC approved the "California Solar Initiative" (CSI) on January 12, 2006. In recognition of the benefits of solar technologies as a viable energy resource alternative to traditional energy technologies, program increases funding by \$300 million in 2006 for solar PV technologies that are currently part of the Self-Generation Incentive Program (SGIP). The Rulemaking states that it intends to adopt at the earliest opportunity a separate and more elaborate program to provide incentives for the installation of solar energy technologies in California. The CSI responds to a policy proclamation by the Governor favoring solar development and strong interest by the State Legislature in an expanded solar incentives program in California. The California Solar Initiative includes the following provisions (CPUC, 2006):

- \$2.9 billion over a 10-year period in rebates that will decline steadily over that same timeframe.
- The CEC will oversee one component of the program to focus on builders and developers of new housing, to encourage solar installations in the residential new construction market. The CPUC will oversee the remainder and majority of the CSI, which will cover existing residential housing, as well as existing and new commercial and industrial properties.
- 10 percent of program funding will be set aside for low-income customers and affordable housing installations.
- Up to an additional 5 percent of the annual budget for potential research, development, and demonstration activities, with emphasis on the demonstration of solar and solar-related technologies.
- Requires that solar incentive payments be made not just for installed capacity, but also with emphasis on the performance and output of the solar systems installed, to ensure that these solar investments are delivering clean energy as promised.
- Requires all facilities that receive an incentive to undergo an energy efficiency audit (at a minimum) to identify more cost-effective energy efficiency investment options at the building.
- Hold workshops to determine incentives for newly constructed buildings that participate in utility energy efficiency new construction programs and exceed the existing building standards by a certain threshold.

Solar resources would require large land areas in order to meet the project objective to supply 1,200 MW of electricity. For example, assuming that a parabolic trough system was located in a maximum solar exposure area, such as in a desert region, generation of 1,200 MW would require 6,000 acres. For a PV plant, generation of 1,200 MW would require 4,800 acres.

While solar generation facilities do not generate problematic air emissions and have relatively low water requirements, there are other potential impacts associated with their use. Construction of solar thermal plants can lead to habitat destruction and visual impacts. PV systems can also have negative visual impacts, especially if ground-mounted. Furthermore, PV installations are highly capital intensive and manufacturing of the panels generates some hazardous wastes.

Both solar thermal and PV facilities generate power during peak usage periods since they collect the sun's radiation during daylight hours. However, even though the use of solar technology may be appropriate for some peaker plants, solar energy technologies cannot provide full-time availability due to the natural intermittent availability of solar resources.

*Stirling Solar Dish.* On October 27, 2005, the CPUC approved a solar renewable energy contract (power purchase agreement) for SCE with Stirling Energy Systems, Inc. on the first commercial application of the "Stirling Solar Dish" (Stirling Energy, 2005a). As a different technology from the more familiar solar panel, the dish concentrates solar energy by the use of reflective surfaces and by the use of the Stirling heat engine to convert the heat into electricity.

This 4,500-acre solar generating station would be the world's largest solar facility, capable of producing more electricity than all other U.S. solar projects combined. The 20-year power purchase agreement calls for development of a 500 MW solar project 70 miles northeast of Los Angeles using innovative Stirling dish technology. The agreement includes an option to expand the project to 850 MW. Initially, Stirling would build a one-MW test facility using 40 of the company's 37-foot-diameter dish assemblies. Subsequently, a 20,000-dish array would be constructed near Victorville, CA during a four-year period. Although Stirling dish technology has been successfully tested for 20 years, the SCE-Stirling project represents its first major application in the commercial electricity generation field. Experimental models of the Stirling dish technology have undergone more than 26,000 hours of successful solar operation. A six-dish model Stirling power project is currently operating at the Sandia National Laboratories in Albuquerque, New Mexico (Stirling Energy, 2005b).

The Stirling dish technology converts thermal energy to electricity by using a mirror array to focus the sun's rays on the receiver end of a Stirling engine. The internal side of the receiver then heats hydrogen gas, which expands. The pressure created by the expanding gas drives a piston, crank shaft, and drive shaft assembly much like those found in internal combustion engines but without igniting the gas. The drive shaft turns a small electricity generator. The entire energy conversion process takes place within a canister the size of an oil barrel. The process requires no water and the engine is emission-free.

Tests conducted by SCE and the Sandia National Laboratories have shown that the Stirling dish technology is almost twice as efficient as other solar technologies. These include parabolic troughs which use the sun's heat to create steam that drives turbines similar to those found in conventional power plants, and photovoltaic cells which convert sunlight directly into electricity by means of semi-conducting materials like those found in computer chips (Stirling Energy, 2005b).

**Wind.** Wind carries kinetic energy that can be utilized to spin the blades of a wind turbine rotor and an electrical generator, which then feeds alternating current (AC) into the utility grid. Most state-of-the-art wind turbines operating today convert 35 to 40 percent of the wind's kinetic energy into electricity. A single 1.5 MW turbine operating at a 40 percent capacity factor generates 2,100 MWh annually. Modern wind turbines represent viable alternatives to large bulk power fossil power plants as well as small-scale distributed systems. Wind turbines being manufactured now have power ratings ranging from 250 watts to 1.8 MW, and units larger than 4 MW in capacity are now under development (AWEA, 2004). The average capacity of wind turbines today is 750 kW.

As a result of the regional geography, tax incentives, and favorable legislation in the wake of the 1970s energy crisis, California became the first state to develop large wind farms in the early 1980s. California was the first U.S. state in which large wind farms were developed, beginning in the early 1980s, and the State still leads the nation in wind power generation. However, 16 other states are considered to have greater overall wind generation potential. California currently has an installed capacity of 2,051 MW, and

an additional over 300 MW are planned (AWEA, 2004). The San Gorgonio Pass and Tehachapi area are two likely sources of wind energy within SCE's territory.

In open, flat terrain, a utility-scale wind plant would require about 60 acres per MW of installed capacity. However, only 5 percent (3 acres) or less of this area would actually be occupied by turbines, access roads, and other equipment. The remainder could be used for other compatible uses such as farming or ranching. A wind plant located on a ridgeline in hilly terrain will require much less space, as little as two acres per MW (AWEA, 2004).

*San Gorgonio Pass.* The San Gorgonio Pass near Palm Springs hosts the third largest concentration of wind turbines in California. There are more than 3,500 wind turbines located in the pass, many massed on the floor of the Whitewater Wash (an ephemeral stream) cutting a wide gap through the San Bernardino Mountains to the north and the San Jacinto Mountains to the south. The San Gorgonio wind turbines produce approximately 600 million kilowatt-hours (kWh) every year. This amount of electricity is enough to meet the needs of 100,000 typical homes or about 250,000 people; however, the available land for new wind turbines in the area is nearing capacity and thus the future capacity potential is low.

*Tehachapi.* The Tehachapi area is one of the State's most productive and historic wind energy resource areas with roughly 600 MW of installed capacity. Only the San Gorgonio and Altamont Pass areas rival Tehachapi for productivity. Many of the installed systems at Tehachapi have their origins in the early 1980s. Over the years, at least 30 separate wind development projects have led to installation of more than 4,600 turbines in the Tehachapi area, and a new development boom is just beginning. In the upcoming decades, the CEC forecasts the potential for 4,400 MW of new wind generation in the area, and the CAISO currently anticipates about 1,100 MW worth of new wind projects. As of January 27, 2006, applications for more than 2,100 MW of new wind capacity in Los Angeles and Kern Counties had been filed with the CAISO (CAISO, 2006). All of this energy would need to be carried to CAISO customers by the major investor-owned utilities (either PG&E or SCE). However, the utilities do not have adequate transmission facilities to deliver this energy. In addition to the development foreseeable by CAISO, northwest of Mojave, the Los Angeles Department of Water and Power is currently developing a major wind system for its customers (the 120 MW Pine Tree Wind Project).

**Hydroelectric Power.** In order to locate a hydropower project with peaking capability of 100 MW, a significant area of land is required, typically on the order of 1,400 acres, with construction of a storage reservoir constituting the primary land use. While hydropower does not require burning fossil fuels and may be available (e.g., on the Colorado River or a local water resource), this power source can cause significant environmental impacts primarily due to the inundation of many acres of potentially valuable habitat and the interference with fish movements during their life cycles. As a result of these impacts, it is extremely unlikely that new hydropower facilities could be developed and permitted in California within the next several years.

#### Consideration of CEQA/NEPA Criteria

##### *Project Objectives, Purpose, and Need*

Renewable resources, in particular, tend to rely on dedicated, long-term, full-requirement contracts. SCE has stated that it is not aware of any renewable generation projects in southern California in which only a portion of its full capacity is secured by contract, and the remaining capacity is sold on a merchant basis. Therefore, use of renewable resources would be inconsistent with the objectives of the Proposed Project, which are focused on creating the ability for DPV2 to increase California's transmission import capability from the Southwest and enhance and support the competitive energy market in the Southwest.

SCE stated in the PEA that it specifically considered the solar and wind renewable generation as alternatives to this project. Generation from either technology is categorically "as available" and therefore does not provide the dispatch flexibility that resources delivered via DPV2 can potentially provide. Nevertheless, SCE's evaluation of DPV2 assumes full compliance with California's Renewable Portfolio Standard, in which SCE plans to meet the statutory requirement that 20 percent of its retail energy load be met by renewable generation and a significant portion of this goal is expected to be met through wind and solar generation. Moreover, SCE's future procurement activities will consider additional cost-effective renewable resources that go beyond the 20 percent statutory requirement.

### ***Feasibility***

As described below, each of the renewable technologies below would not be able to produce 1,200 MW as is required for the DPV2 Project. If several different technologies were combined together, such as development of wind technology in the Tehachapi area, the Stirling Solar Dish and/or the Imperial Valley geothermal reserves, it would be possible to generate more than 1,200 MW of power. However, the permitting and construction of the various projects within the project timeline would be unlikely and each of the projects would still require the construction of transmission lines to bring the power into the Los Angeles area.

### ***Environmental Advantages***

Renewable technologies would not require the burning of fossil fuels and the environmental and resource impacts associated with natural gas-fired or nuclear power. The visual and construction impacts of the Proposed Project would not occur if a feasible source of renewable power were available near the locations where energy is consumed.

### ***Environmental Disadvantages***

Renewable technology facilities do not generate air emissions like conventional power plants, and they generally have relatively low water requirements. However, there are other potential impacts associated with their use. Construction of solar and geothermal plants and wind turbines can lead to habitat destruction and visual impacts. In addition, all forms of renewable energy would also require the construction of transmission of the point of generation to the load served, which would create similar types of impacts as the Proposed Project.

**Geothermal.** While geothermal plants produce far fewer emissions than combined-cycle gas plants, geothermal reservoirs contain varying levels of hydrogen sulfide gas ( $H_2S$ ), which smells like rotten eggs and can be toxic at high concentrations. The odor can be a nuisance even at very low concentrations during drilling and plant start-up, but is not an issue during normal plant operations. Geothermal plants also emit very low levels of carbon dioxide ( $CO_2$ ) and sulfur oxides. Reservoirs with high concentrations of boron have the potential to harm nearby plant life. In addition, mercury and arsenic from a geothermal reservoir can accumulate in scale in plant piping systems in concentrations high enough to require monitoring, special handling and regulated disposal as hazardous wastes. Binary plants, which have closed cycles, avoid many pollution problems because they have virtually no emissions.

**Biomass.** Biomass facilities generate substantially greater quantities of air pollutant emissions than natural-gas burning facilities. These emissions vary depending upon the precise fuel and technology used. The collection of biomass fuels can have significant environmental impacts. Harvesting timber and growing agricultural products for fuel requires large volumes to be collected, transported, processed and stored. Biomass fuels may be obtained from supplies of clean, uncontaminated wood that otherwise would be landfilled or from sustainable harvests. On the other hand, the collection, processing and combustion of

biomass fuels may cause environmental problems if, for example, the fuel source contains toxic contaminants, agricultural waste handling pollutes local water resources, or burning biomass deprives local ecosystems of nutrients that forest or agricultural waste may otherwise provide.

**Solar.** While solar generation facilities do not generate air emissions and have relatively low water requirements, there are other potential impacts associated with their use. Construction of solar thermal plants can lead to habitat destruction and visual impacts. PV systems can also have negative visual impacts, especially if ground-mounted. Furthermore, PV installations are highly capital intensive, and manufacturing of the panels generates some hazardous wastes.

**Wind.** In addition, to the land and transmission lines that would be required for renewable technologies, wind turbines can create other environmental impacts, as summarized below (AWEA, 2004):

- Erosion can be a concern in certain habitats such as the desert or on mountain ridgelines. Standard engineering practices can be used to reduce erosion potential.
- Birds collide with wind turbines. Avian deaths have become a concern at Altamont Pass in California, which is an area of extensive wind development and also high year-round raptor use.
- Wind energy can negatively impact birds and other wildlife by fragmenting habitat, both through installation and operation of wind turbines themselves and through the roads and power lines that may be needed.
- Bat collisions at wind plants generally tend to be low in number and to involve common species, which are quite numerous. A high number of bat kills at a new wind plant in West Virginia in the fall of 2003 has raised concerns, and the problem of bat mortality at that site is currently under investigation.
- Visual impacts of wind power fields can be significant, and installation in scenic and high traffic areas often results in strong local opposition.
- Noise was an issue with some early wind turbine designs, but it has been largely eliminated as a problem through improved engineering and through appropriate use of setbacks from nearby residences. Aerodynamic noise has been reduced by changing the thickness of the blades' trailing edges and by making machines "upwind" rather than "downwind" so that the wind hits the rotor blades first, then the tower (on downwind designs where the wind hits the tower first, its "shadow" can cause a thumping noise each time a blade passes behind the tower). A small amount of noise is generated by the mechanical components of the turbine.

**Hydroelectric.** Negative aspects of hydroelectric development primarily center around inundation to reaches of stream and riparian lands as a result of dam and reservoir development, that result in permanent changes to the environment. These include creating barriers for fish passage, displacing native plant and animal species, and eliminating whitewater recreation areas. Hydroelectric developments with large water storage components can create the potential for flooding downstream from high releases during storm events or due to catastrophic dam failures. Construction of new dams and maintenance of old structures must undergo rigorous design analyses that demonstrate the ability to perform safely under the most adverse seismic and flood conditions.

### Alternative Conclusion

**ELIMINATED.** Each of these technologies could be attractive from an environmental perspective because of the absence or reduced level of air pollutant emissions. However, these technologies also would cause environmental impacts and have feasibility problems. Use of renewable generation technologies would avoid the specific impacts associated with the construction and operation of the proposed DPV2 project,

but new transmission would still be required from the renewable generation locations, creating impacts similar to those of the Proposed Project, which is proposed to transmit power from an already *existing* generation source. In addition to the reliability and feasibility issues discussed above, use of renewable resources would be inconsistent with the objectives of the proposed DPV2, which are focused on creating the ability for DPV2 to increase California's transmission import capability from the Southwest and enhance and support the competitive energy market in the Southwest. Therefore, renewable technologies have been eliminated from detailed consideration in this EIR/EIS.

#### 4.5.3 Conservation and Demand-Side Management

##### Alternative Description

For the past 30 years, while per capita electricity consumption in the United States has increased by nearly 50 percent, California electricity use per capita has been relatively flat. This achievement is the result of continued progress in cost-effective building and appliance standards and ongoing enhancements to efficiency programs implemented by investor-owned utilities (IOUs), customer-owned utilities, and other entities. Since the mid-1970s, California has regularly increased the energy efficiency requirements for new appliances sold and new buildings constructed here. In addition, in a creative and precedent-setting move, the CPUC in the 1980s de-coupled the utilities' financial results from their direct energy sales, facilitating utility support for efficiency programs. These efforts have reduced peak capacity needs by more than 12,000 MW and continue to save about 40,000 gigawatt hours (GWh) per year of electricity (CPUC & CEC, 2005).

In the 2003 IEPR, the CEC concluded that California could save an additional 30,000 GWh of energy from energy efficiency programs over the coming decade (CEC, 2005b). In September 2004, the CPUC adopted the nation's most aggressive energy savings goals for both electricity and natural gas by establishing aggressive energy savings goals and authorizing a significant increase in energy efficiency funding. In achieving these targets will reduce the utilities' need for additional electricity supplies between 2004 and 2013 by more than half (CEC, 2005b) and the IOUs will save an additional 5,000 MW and 23,000 GWh per year of electricity, and 450 million therms per year of natural gas by 2013 (CPUC & CEC, 2005).

The recent passage of SB 1037 (Kehoe) Chapter 366, Statutes of 2005, further reinforces the State's energy efficiency policies by requiring all utilities to meet their unmet resource needs first with energy efficiency and demand reduction resources that are cost-effective, reliable, and feasible.

Flex Your Power – Energy Efficiency is a statewide consumer marketing campaign that focuses exclusively on energy efficiency. The goal is to capitalize on the "Flex Your Power" campaign through newspaper, radio and television media targeting English and Asian-speaking communities. SCE facilitated the statewide coordination between the IOUs and Flex Your Power as the administrator of this statewide program. SCE fulfilled the same role as statewide administrator of the Univision Television Energy Efficiency Marketing (U-TEEM) and Runyon Saltzman & Einhorn's (RS&E) "Reach for the Stars" marketing campaigns. U-TEEM is a consumer marketing and outreach program that targets Spanish speaking customers. RS&E's campaign is focused on moderate income customers in rural areas within the State of California. At the end of December 2004, all three campaigns achieved their goal of raising general awareness of energy efficiency (SCE, 2005b).

SCE collected funding for its 2004 energy efficiency programs pursuant to California Public Utilities Code sections 381 and 399 et seq., and as directed by the CPUC in Decision 03-12-062. The CPUC approved the 2004 energy efficiency program activities in Decisions 03-12-060 and 04-02-059. The overall energy efficiency program includes a host of information, services, and incentives under the following program areas: Residential, Non-Residential, New Construction, Crosscutting, Market Assessment and



Evaluation (MA&E) and Regulatory Oversight, Shareholder Performance Incentives, IOU Partnerships, and Non-IOU Programs. SCE's 2005 Energy Efficiency Annual Report states that the 2004 results from all of SCE's 2004-2005 energy efficiency programs provided nearly 950 million kilowatt-hours (kWh) of net annualized energy savings, 175 megawatts (MW) of net peak demand reduction, and over \$570 million of resource benefits (SCE, 2005b).

### Consideration of CEQA/NEPA Criteria

#### *Project Objectives, Purpose, and Need*

The Conservation and Demand-Side Management Alternative would not increase California's transmission import capability from the Southwest and nor would it enhance and support the competitive energy market in the Southwest. Therefore, this alternative would not meet most of the stated objectives of the Proposed Project.

#### *Feasibility*

Demand response programs are the most promising and cost-effective options for reducing peak demand on California's electricity system. Although the CPUC adopted demand reduction targets for investor-owned utilities in 2003, such as SCE, demand response programs have failed to deliver their savings targets for each of the last three years and appear unlikely to meet their targets for next year (CEC, 2005b).

#### *Environmental Advantages*

This alternative would reduce energy consumption, thus would reduce the need for power generation and new transmission lines. All effects of the Proposed Project would be avoided.

#### *Environmental Disadvantages*

There would be no environmental disadvantages because there would be no construction and no new impacts would be created.

### Alternative Conclusion

**Demand-Side Management. ELIMINATED.** Demand response represents a small fraction of the total capacity requirement needed to meet SCE's import and supply reliability objectives. As a stand-alone alternative to DPV2, these programs cannot meet the growing electricity demands of California for two main reasons. First, SCE's 2004 Long Term Procurement Plan (LTPP) already includes the maximum amount of approved demand response investments over the next ten years, amounting to approximately 1,400 MW of peak load reduction by 2014. Even with the amount of demand response SCE is planning to implement, SCE has stated that the economic analysis on purpose and need has shown that DPV2 is still a cost-effective project in addition to approved and projected demand-side management investments (SCE, 2005a). Second, demand response programs are resources that are designed to primarily provide capacity benefits and not low-cost energy benefits such as DPV2. While SCE supports the CPUC's "loading order" and is aggressively pursuing demand-side programs before other resource alternatives, implementation of additional demand response over-and-above what is currently planned in SCE's service territory that match the size and scale of DPV2 is unlikely. Instead, new supply resources and/or increased access to new supply resources via transmission are needed in addition to demand response investments. For these reasons, the demand response alternative does not meet the project's objectives and was excluded from further evaluation.

**Conservation. *ELIMINATED.*** SCE's 2004 LTPP already includes the maximum reliably achievable amount of cost effective energy efficiency, amounting to nearly 6 billion kWh reduction in sales over and above what is currently implemented over the next ten years and therefore is not an alternative to DPV2. In fact, SCE has stated that based on the economic analysis regarding purpose and need of the Proposed Project, DPV2 would still be cost effective even with the amount of energy efficiency SCE is planning to implement. Finally, for similar reasons as the DSM alternative discussed above, the energy efficiency alternative does not meet the project's objectives and was excluded from further evaluation.

#### 4.5.4 Distributed Generation

##### Alternative Description

Distributed Generation (DG) is generally considered to be generation, storage, or demand-side management devices, measures, and/or technologies connected to the distribution level of the transportation and distribution grid, usually located at or near the intended place of use. There are many DG technologies, including microturbines, internal combustion engines, combined heat and power (CHP) applications, fuel cells, photovoltaics and other solar energy systems, wind, landfill gas, digester gas and geothermal power generation technologies. Distributed power units may be owned by electric or gas utilities, by industrial, commercial, institutional or residential energy consumers, or by independent energy producers. To the extent that it is established, DG acts to either reduce the load on the SCE system or be applied as additional system generation. In either case, it would help to support SCE's ability to meet the applicable reliability criteria.

Distributed generation is the generation of electricity from facilities that are smaller than 50 MW in net generating capacity. Local jurisdictions — cities, counties and air districts — conduct all environmental reviews and issue all required approvals or permits for these facilities. Most DG facilities are very small, for example, a fuel cell can provide power in peak demand periods for a single hotel building.

There are several incentive programs designed to provide financial assistance to those interested in operating Distributed Generation systems in California. Senate Bill 1345 (Statutes of 2000, Chapter 537, Peace, signed by Governor Davis in September 2000) directs the Energy Commission to develop and administer a grant program to support the purchase and installation of solar energy and small distributed generation systems. Solar energy systems include solar energy conversion to produce hot water, swimming pool heating, and electricity, as well as battery backup for PV applications. Small distributed generation systems include micro-cogeneration, gas turbines, fuel cells, electricity storage technologies (in systems other than PV), and reciprocating internal combustion engines.

##### Consideration of CEQA/NEPA Criteria

##### *Project Objectives, Purpose, and Need*

While DG technologies are recognized as important resources to the region's ability to meet its long-term energy needs, DG does not provide a means for SCE to meet its objectives for the project because of the comparatively small capacity of DG systems and the relatively high cost.

In addition, since it is usually located at or near the intended place of use, the DG Alternative would not increase California's transmission import capability from the Southwest and nor would it enhance and support the competitive energy market in the Southwest. Therefore, this alternative would not meet most of the stated objectives of the Proposed Project.

### ***Feasibility***

Consideration of DG as an alternative to the Proposed Project is not feasible because no single entity has proposed implementing a substantial DG program. Also, a number of serious barriers, including technical issues, business practices, and regulatory policies, make interconnection to the electrical grid in the United States difficult. Broad use of distributed resources would likely require regulatory support and technological improvements. There could be regulatory feasibility issues with the lengthy permitting process. Air permits are generally the first permits sought for DG facilities because air district requirements influence equipment selection. Once the DG equipment has been selected, the land use approval process can begin. Local governments must know what makes and models of equipment will be installed to evaluate potential significant environmental impacts (e.g., noise and aesthetics) and to specify mitigation measures. Building permits are sought last because construction plans must incorporate all project changes required by the local government planning authority to mitigate environmental impacts. This lengthy permitting process would make it impossible to construct this technology within the timeframe of the Proposed Project.

In a January 2002 report on DG the CEC concluded that "DG is capable of providing several Transmission and Distribution (T&D) services, but the extent to which DG can be successfully deployed to effectively supply them are limited by (1) the technical capabilities of various DG technologies; (2) technical requirements imposed by the grid and grid operators; (3) business practices by T&D companies; and (4) regulatory rules and requirements . . . some technical barriers resulting from key characteristics of the prime mover will prevent some DG technologies from providing certain T&D services." Some problems of specific types of distributed generation include the following:

- **Renewable Energy Sources.** As discussed above, the high cost and limited dispatchability of small-scale renewable energy sources such as solar and wind power essentially inhibit their market penetration. In addition, biomass and wind facilities require specific circumstances for siting (i.e., near sources of bio-fuel or in high wind areas), and have their own environmental consequences (e.g., requiring large land areas or resulting in large quantities of air emissions).
- **Fuel Cells.** The present high cost of and small generation capacity of fuel cells precludes their widespread use.
- **Other Fossil-Fueled Systems.** Microturbines and various types of engines can also be used for distributed generation; these technologies are advancing quickly, becoming more flexible, and impacts are being reduced. However, they are still fossil-fueled technologies with the potential for significant environmental impacts, including noise. Such systems also have the potential for significant cumulative air quality impacts because individually they are typically small enough to avoid the regulatory requirements for air pollution control. Therefore, use of enough of these systems to constitute an alternative to the Proposed Project would potentially cause significant unmitigated air quality impacts.

### ***Environmental Advantages***

Linear construction impacts of transmission lines would be less because the source of energy generation would be in close proximity to the location of demand. Other lessening of environmental effects would depend on the type of generation that would be used (see individual discussions).

### ***Environmental Disadvantages***

Potential new impacts created by DG would depend on the type of generation that would be used. Impacts of solar and wind facilities are addressed above. Other types of DG have air quality and noise impacts.

### Alternative Conclusion

**ELIMINATED.** As stated in SCE's 2004 LTPP,<sup>34</sup> SCE supports the integration of cost-effective distributed generation as both a demand-side and grid-side resource. SCE's 2004 LTPP forecasts a 6 percent annual growth in distributed generation resources<sup>35</sup> exceeding the Energy Action Plan goal of 1 percent growth per year. However, most DG facilities are very small, averaging less than 0.1 MW per facility. It does not appear to be feasible to construct and operate a distributed generation alternative in quantity sufficient to meet projected demand growth that can be served by the large-scale generation in the Palo Verde area. For these reasons, the distributed generation alternative does not meet the project's objectives and was excluded from further evaluation.

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<sup>34</sup> See, R.04-04-003 Volume 1 at 81.

<sup>35</sup> SCE has over 3,500 distributed generation sites with a combined capacity of about 255 MW, which have been approved/authorized since 2001.

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### 3. General Responses to Major Comments

This section addresses issues that were raised by many commenters and that therefore required a detailed response. General Responses address the following topics:

- GR-1 – Eliminate new impacts within the Kofa National Wildlife Refuge
- GR-2 – The DPV2 Project provides no benefit to Arizona
- GR-3 – Why is the DPV2 Project needed?

#### General Response GR-1: Eliminate New Impacts Within the Kofa National Wildlife Refuge

Commenters expressed concerns regarding impacts to the Kofa National Wildlife Refuge (NWR) and protection of the desert bighorn sheep. This response also addresses questions about why no alternatives were evaluated in detail that would avoid the Kofa NWR.

The baseline setting and potential impacts from the Proposed Project to Kofa NWR are discussed within each Section D issue area of this EIR/EIS under the segment titled “Kofa National Wildlife Refuge.”

In response to the concerns about impacts to the Kofa NWR, and as required under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), a reasonable range of alternatives to the project was evaluated. Alternatives were considered that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. Alternatives are addressed in most detail in Appendix 1, Alternatives Screening Report. Within this report, Section 2 summarizes the requirements of CEQA and NEPA with respect to alternatives. Based on review of previous environmental documents prepared to analyze the DPV1 and DPV2 projects, knowledge of the area, and evaluation of feasible route options throughout the entire area around Kofa NWR, the following three alternatives were considered as methods of avoiding impacts to Kofa National Wildlife Refuge:

- **SCE North of Kofa NWR–South of I-10 Alternative.** Diverges from the proposed DPV2 route approximately 42.5 miles from its origin at Harquahala Switchyard and heads northwest approximately 1.5 miles before turning west-northwest towards I-10. Crosses north of Kofa NWR and the New Water Mountains, south of I-10, and eventually rejoins the proposed DPV2 route 0.5 miles north of Yuma Proving Ground and 8 miles west of Kofa NWR.
- **SCE North of Kofa NWR–North of I-10 Alternative.** Similar to the North of Kofa NWR–South of I-10 Alternative (see above), except it would cross I-10 twice and Arizona U.S. Highway 60 once to follow the Celeron/All American Pipeline corridor north of I-10.
- **North of Kofa Alternative.** Diverges from the proposed route at the series capacitor just east of the Kofa NWR and travels north of Kofa NWR and south of I-10. Rejoins the Proposed Project approximately 1.25 miles west of the boundary of Kofa NWR and south of Quartzsite

These alternatives are illustrated in Figure Ap.1-2a (on the following page) and are addressed in detail in Appendix 1, Sections 4.2.5, 4.2.6, and 4.2.7, as well as in Sections C.5.2.1, C.5.2.2, and C.5.2.3, and Executive Summary Section ES.2.3 in this EIR/EIS. To compare these three alternatives to the Proposed Project, it is necessary to compare them over an equivalent portion of the transmission line. Consequently, the comparison of the acreage impacted by the Proposed Project and each alternative compares from Milepost 42.0 to Milepost 86.0 of the Proposed Project route. All of the alternatives



would diverge from the Proposed Project route and re-join the Proposed Project route between these mileposts.

### **Alternatives Outside of Kofa NWR**

As a result of greater impacts to recreation, visual, and biological resources, and the challenges in obtaining regulatory approvals, all three alternatives that would avoid Kofa NWR were eliminated from full consideration in this EIR/EIS and the route through the wildlife refuge was found to be the most environmentally preferred. All three alternatives would meet project objectives, but all would also be outside of BLM-designated utility corridors. With the SCE North of Kofa NWR-North of I-10 Alternative it may not be feasible to obtain the required amendment to the Lower Gila South RMP, which currently prohibits overhead transmission lines. Each of the alternatives would create a new corridor with associated ground disturbance (there are few usable access roads and the routes would be 3.4 to 10 miles longer than the portion of the Proposed Project that each would replace). As a result, there would be substantially greater impacts to bighorn sheep and currently undisturbed biological resources, and potentially significant visual impacts through previously undisturbed land. The SCE North of Kofa NWR-North of I-10 Alternative and SCE North of Kofa NWR-North of I-10 Alternative routes, which traverse through the La Posa Recreation Areas, would impact a greater number of recreation users than the Proposed Project's route through Kofa NWR. Views from I-10 and residences and recreation areas along Highway 95 and along the La Posa Plains would also be impacted by the new transmission corridor created by the alternatives and would reduce the scenic quality of these views.

### ***Regulatory Feasibility Issues***

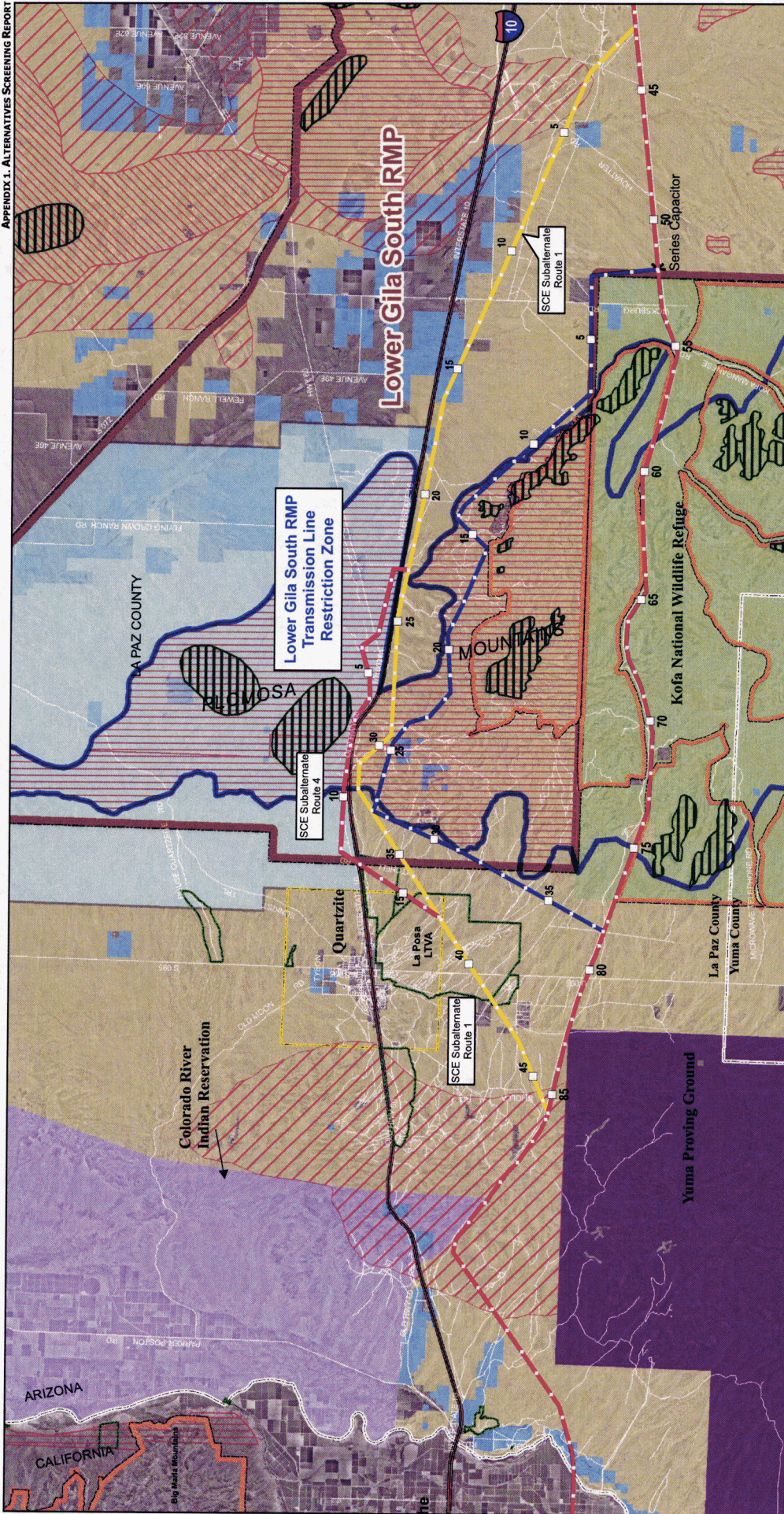
Each of the alternatives would be technically and legally feasible and would meet all of the stated objectives of the Proposed Project. However, all three would likely take more time to complete permitting requirements, so none of them would likely be completed by the end of 2009.

All three of the alternatives around Kofa NWR would be on BLM lands outside of established BLM utility corridors, and as such each of their approvals would require BLM approval for creation of a new utility corridor. Because the Resource Management Plans for the SCE North of Kofa NWR-South of I-10 Alternative and the North of Kofa Alternative routes do not specifically prohibit transmission lines in the area, a new ROW grant would be required, but a Plan amendment would not be necessary. This requirement would not make the two alternatives infeasible, but would add to the regulatory complexity of them.

However, approval of the SCE North of Kofa NWR-North of I-10 Alternative would require an amendment to the Lower Gila South RMP. The Lower Gila South RMP prohibits overhead lines north of I-10 between townships 16W and 18W (BLM, 1985) due to sensitive lambing grounds for bighorn sheep and sensitive visual resources. The requirement for a plan amendment may not make the alternative infeasible, but it would add a series of regulatory requirements.

Figure Ap.1-2a North of Kofa Alternatives  
[CLICK HERE TO VIEW](#)





**Aspen**  
Environmental Group

PREPARED BY

**Devers-Palo Verde No. 2  
Transmission Line Project**

**Figure Ap. 1-2a  
North of Kofa Alternatives**

**OWNERSHIP/JURISDICTIONS**

	BLM		State
	Military		Tribal Land
	FWS		Private

**Desert Tortoise Habitat**

	Category 1
	Category 2
	Category 3
	Bighorn Sheep Habitat
	Bighorn Sheep Lambing Grounds

**Proposed Project**

	SCE North of Kofa - South of Interstate 10 Alternative (Subalternative 1)
	SCE North of Kofa - North of Interstate 10 Alternative (Subalternative 4)
	North of Kofa Alternative

Series Capacitor

**Incorporated Areas**

	Wilderness Areas
	Designated Campgrounds
	Lower Gila South RMP
	Lower Gila South RMP Transmission Line Restriction Zone



***Environmental Impacts of Alternatives North of Kofa NWR***

All three of the alternatives would offer some biological resources, recreation, land use, and visual resources advantages by eliminating temporary and permanent impacts that would result from adding a second set of towers adjacent to the existing corridor through the Kofa NWR. Based on surveys of the entire route performed by EIR/EIS staff on December 13-19, 2005, the North of Kofa Alternative would also be located in a less culturally sensitive area than the Proposed Project route through the Kofa NWR.

However, even though the alternatives would reduce impacts to biological and recreational resources, visual resources and land use by being outside of a wildlife refuge, and would eliminate policy inconsistencies associated with construction of a new transmission line on protected refuge land, each would result in similar or greater impacts to these resources outside of Kofa NWR. For instance, the alternatives would traverse similar habitat for biological resources as the Proposed Project, but would result in substantially more permanent ground disturbance and habitat lost, so it would likewise result in potentially significant impacts to sensitive bighorn sheep or desert tortoise populations.

The following paragraphs present a more detailed description of the environmental disadvantages of all of the alternative routes that were considered outside of Kofa NWR.

**Additional Route Length and Ground Disturbance.** The three routes would be approximately 3.4 to 10 miles longer than the proposed route, which will affect the length and intensity of short-term construction impacts and ground disturbance, increasing impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with greater ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native desert vegetation. In addition, the Proposed Project would be able to utilize existing access for access to new transmission towers. The alternatives, however, would require additional access and spur roads which would result in permanent ground disturbance and corresponding loss of habitat.

**Project Components and Acreage of Disturbance.** Tables GR.1-1 and GR.1-2 compare project components and impacts associated with the Proposed Project and the North of Kofa Alternatives. Note that the Proposed Project, overall, would result in substantially less acreage of new disturbance (the alternatives would affect from 88 to 128 acres of additional disturbance).

**Table GR.1-1. Comparison of Project Components between Proposed Project Mileposts 42.0 and 86.0**

	Proposed Project	SCE North of Kofa – North of I-10 Alternative	SCE North of Kofa – South of I-10 Alternative	North of Kofa Alternative
Length of transmission line	44.0 miles	49.1 miles	47.4 miles	55.0 miles
Number of Lattice Steel Towers (approximate)	150	167	161	187
New Access Roads	0.0 miles	46.0 miles	44.3 miles	51.4 miles
New Spur Roads	3.7 miles	4.1 miles	4.0 miles	4.6 miles
<b>New Permanent Area Occupied (acres)</b>				
Tower Footings	1.5	1.7	1.6	1.9
Access Roads	0.0	78.0	75.2	87.2
Spur Roads	6.2	7.0	6.7	7.8
Series Compensation	2.0	2.0	2.00	2.0
Total	9.7	88.7	85.6	98.9
<b>New Temporary Area Occupied (acres)</b>				
Transmission Line Structures	134.6	150.2	145.0	168.3
Construction Yards	5.0	5.0	5.0	5.0
Pulling Stations	13.2	14.7	14.2	16.5
Splicing Stations	2.9	3.3	3.2	3.7
Batch Plant Areas	2.9	3.3	3.2	3.7
Series Capacitor Banks	1.00	1.0	1.00	1.0
Total	159.7	177.5	171.6	198.1
<b>Total Area Occupied (acres)</b>				
<b>Grand Total</b>	<b>169.4</b>	<b>266.2</b>	<b>257.2</b>	<b>297.0</b>

Note: Affected area estimates are based on the following factors:

- 0.010 acre per lattice steel tower- permanent
- 14' (width) x 130' (length) spur roads at every tower – permanent
- 14' (width) access roads - permanent
- 0.9 acre per tower pad – temporary
- 0.9 acre per pulling station, one every 3 miles – temporary
- 0.2 acre per splicing station, one every 3 miles – temporary
- 2.0 acres per batch plant, one every 30 miles – temporary
- Areas occupied by facilities installed within existing substation and communications site properties are not included in estimates.

Source: SCE, 2005.

**New Transmission Corridor.** Each of the three alternatives would establish a new transmission line corridor and would require considerable upgrading and construction of new roads, as opposed to the Proposed Project, which would use existing access for construction and maintenance along the DPV1 corridor. In general, consolidating transmission lines within common utility corridors, as proposed with DPV2, is desirable because it minimizes land disturbance, barriers to wildlife movement, and additional visual impacts that typically result from separate transmission line corridors. In addition, constructing the project within a corridor separate from a designated utility corridor (e.g., the DPV1 corridor) would create land use consistency issues because the route would be inconsistent with the BLM RMPs. In addition, for the SCE North of Kofa NWR–North of I-10 Alternative, plan amendments would be necessary in order for the BLM to grant approval of this alternative ROW due to its location through townships 16W to 18W north of I-10.

Table GR.1-2 presents a comparison of linear miles of impacts for each alternative in areas of high resource value: desert tortoise habitat, bighorn sheep habitat and lambing grounds, recreational areas, and BLM Resource Management Plan restricted areas. Each of these topics is addressed below the table and is depicted on Figure Ap.1-2a.

**Table GR.1-2. Comparison of Impacts between Proposed Project and North of Kofa Alternatives**

Alternative	Acres of Disturbance	Miles of Category 2 Desert Tortoise Habitat Traversed	Miles of Bighorn Sheep Habitat Traversed	Distance to nearest Lambing Ground	Miles through Recreation Area or Kofa NWR	BLM RMP Restrictions
Proposed Project	169.4 acres	0.0 miles	16.2 miles	0.6 miles	25.0 miles (Kofa NWR)	None
SCE North of Kofa – North of I-10	266.2 acres (96.8 acres more than Proposed Project)	9.4 miles	9.4 miles	0.2 miles	6.9 miles (La Posa Recreation Site and LTVA; La Posa Designated Camping Area)	Lower Gila South RMP prohibits overhead transmission lines between townships 16W and 18W
SCE North of Kofa – South of I-10	257.2 acres (87.7 acres more than Proposed Project)	4.5 miles	4.5 miles	1.3 miles	5.1 miles (La Posa Recreation Site and LTVA; La Posa Designated Camping Area)	None
North of Kofa	297.0 acres (127.6 acres more than Proposed Project)	16.3 miles	16.3 miles	0.3 miles	0.0 miles (La Posa Recreation Site and LTVA; La Posa Designated Camping Area)	None

**Biological Resources – Wildlife.** Although the alternatives would avoid crossing the Kofa NWR, all three alternatives could have greater adverse impacts than the Proposed Project. The SCE North of Kofa-South of I-10 Alternative route would create a new disturbed corridor through undisturbed BLM Category 2 Desert Tortoise habitat, which could increase impacts and mitigation for tortoises rather than building adjacent to an existing line. The Proposed Project in Kofa NWR, while on valuable desert tortoise habitat, does not have a comparative habitat designation since it would not be on BLM-administered land. In addition, a new corridor along this alternative route would result in a greater potential to impact bighorn sheep migration corridors that cross under I-10 to reach the lambing grounds. Although the SCE North of Kofa-South of I-10 Alternative would be farther from lambing grounds than the Proposed Project, it would result in new disruptions to the migration corridors and would disturb approximately 87.7 more acres of undisturbed desert habitat than the Proposed Project.

The SCE North of Kofa-North of I-10 Alternative would have a greater adverse impact to bighorn sheep than the Proposed Project. In addition, a portion of the alternative's route between townships 16W and 18W would result in impacts to bighorn sheep lambing grounds identified in the BLM's Lower Gila South RMP, an area deemed unsuitable for overhead transmission lines. As described above for the SCE North of Kofa-South of I-10 Alternative, the North of I-10 Alternative would also disrupt migration corridors. Additionally, the North of I-10 Alternative would run within approximately 0.2 miles of bighorn sheep lambing grounds. Additionally, the route would pass through BLM Category 2 Desert Tortoise habitat, which could increase impacts and mitigation for tortoises. The SCE North of

Kofa-North of I-10 alternative would permanently disrupt approximately 96.8 more acres of undisturbed desert habitat than the Proposed Project.

For the North of Kofa Alternative the EIR/EIS team completed a biological survey of the entire length of the North of Kofa Alternative on December 5-7, 2005. The results of the survey in regards to biological regulations and concerns included the following resources:

- Suitable habitat for the Sonoran Desert tortoise (BLM sensitive and State WSCA) was identified along almost the entire route.
- Suitable habitat and suitable migratory habitat for the desert bighorn sheep was identified along the route within the Plomosa Mountains, and adjacent to the route north of the New Water Mountains and New Water Mountains Wilderness Area.
- Loggerhead shrikes, a BLM sensitive status bird, were observed near the southwest and southeast ends of the route.
- No special status bat species were observed; however, a few mineshafts were observed near the central portion of the route on BLM and private land.
- Several species of plants protected under the ADA Arizona Native Plant Law were observed along the route. Protection categories did not include any Highly Safeguarded plants.

Overall, the North of Kofa Alternative would require disturbance of a 37-mile corridor that is relatively undisturbed at this time. A new access road would need to be constructed, following portions of existing unpaved or 4-wheel drive roads. In addition, disturbance would occur in areas with no existing access roads, such as mountain foothills. Bighorn sheep inhabit the mountainous areas of western Arizona and migrate through the foothills when moving from one area to another. When comparing this alternative route to the proposed route through the Kofa NWR, the same types of biological resources would be affected; however, the degree of effect would increase significantly when assessing impacts to the bighorn sheep due to the creation of a new corridor through undisturbed wilderness. As described above for the SCE North of Kofa Alternatives, the North of Kofa Alternative would be approximately 0.3 miles closer than the Proposed Project to the nearest bighorn sheep lambing grounds and would also create a new disruption to migration corridors. The North of Kofa Alternative would pass through Game Management Unit (GMU) 44B South, which includes the Plomosa and New Water Mountains and has had a downward trend from 2002 to 2003. The alternative route would affect an area not currently crossed by a utility corridor, and would require disturbance of 127.6 acres more land than the proposed route.

**Recreation.** The North of Kofa NWR-South of I-10 Alternative and the North of Kofa NWR-North of I-10 Alternative would both cross through the heavily used La Posa Recreation Site and Long-Term Visitor Area and adjacent to the La Posa Designated Camping Area. Mineral and gem shows and swap meets during the winter draw tens of thousands of visitors to these recreation areas every year. Construction activities would disrupt recreation in these areas and a new utility corridor through these areas would reduce their recreational value.

**Visual Resources.** As the transmission line for any of the alternatives would diverge from the existing DPV1 ROW, it would create new visual impacts with the creation of a new utility corridor. Each of the routes would reduce various scenic views, including those of the Plomosa Mountains and New Waters Mountains from I-10, from residences and recreationists using the La Posa Recreation Site and Long-Term Visitor Area, and within the potential future Dripping Springs ACEC.

## **General Response GR-2: The Project Provides No Benefit to Arizona**

Several commenters stated that it is unfair for the State of Arizona residents and businesses to bear the environmental impacts of the project while the benefits would accrue primarily to ratepayers in the State of California.

The Purpose and Need for the Proposed Project is briefly discussed in Section A.2, but it is not an issue addressed under CEQA or NEPA. The need for this project is not addressed or decided within this EIR/EIS. As discussed above, the CPUC Administrative Law Judge is evaluating project need through economic modeling during the Phase 1 General Proceeding (I.05-06-041). The Arizona Corporation Commission in a separate proceeding will also be addressing project need.

According to SCE and the California ISO, Arizona would receive some economic benefits from the Project also, as explained in the following paragraphs.

**Benefits to Arizona.** In addition to these regionwide economic benefits of transmission projects, SCE has stated in its Application for a Certificate of Environmental Compatibility (CEC) to the Arizona Corporation Commission (ACC) that:

DPV2 would provide strategic and economic benefits to Arizona, California, and the South-west including enhanced power pooling opportunities, increased emergency interconnection support, improved reliability, and increased utilization of existing Arizona generation facilities [online at <http://www.cc.state.az.us/utility/electric/SCE-App1.pdf>].

SCE further states that generating companies have located themselves in the Palo Verde area to access two large markets: Arizona and southern California. DPV2 would enhance this market by adding transmission capacity between Arizona and southern California. Expanding this market is beneficial to Arizona as it adds high-paying jobs in the energy marketplace, creates economic multiplier impacts due to these jobs, and increases corporate and personal tax base in future years. The employment and tax benefits that would accrue to Arizona from the DPV2 Project include the following:

- Provide approximately 150 jobs during the two-year construction phase.
- Create positive economic impacts from all direct, indirect, and induced employment totaling an estimated \$85 million.
- Generate property tax revenues to state and local government during the construction phase and the first 10 years of operation of approximately \$24 million.

Thus although DPV2 would provide benefits to California, as stated in SCE's PEA and the CAISO economic modeling, it is alleged that DPV2 would also provide benefits to Arizona. However, the purpose of this EIR/EIS is to analyze potential impacts of the project proposed by SCE, not to address purpose and need.

## **General Response GR-3: Why is the DPV2 Project Needed?**

The Purpose and Need for the Proposed Project is briefly discussed in Section A.2, but it is not an issue addressed under CEQA or NEPA. The need for this project is not addressed or decided within this EIR/EIS and neither the CPUC nor BLM have the authority to require construction of new generating facilities in California or elsewhere. As discussed above, the CPUC Administrative Law Judge is evalu-



ating project need through economic modeling during the Phase 1 General Proceeding (I.05-06-041). The Arizona Corporation Commission in a separate proceeding will also be addressing project need.

As stated by SCE in the PEA and described on page A-7 in Section A.2, the objectives for building DPV2 are to:

- Increase California's access to low-cost energy by adding 1,200 MW of transmission import capability into California from the Southwest. This is expected to substantially benefit California by reducing energy costs.
- Enhance competition among generating companies supplying energy to California.
- Provide additional transmission infrastructure to support and provide an incentive for the development of future energy suppliers selling energy into the California energy market.
- Provide increased reliability of supply, insurance value against extreme events, and flexibility in operating California's transmission grid.

As stated in SCE's Proponent's Environmental Assessment (PEA) submitted to the CPUC in April 2005 and summarized in Section A.2 of the Draft EIR/EIS, the DPV2 project is primarily driven by the need to provide additional high-voltage electrical transmission infrastructure to enhance competition among energy suppliers, and increase reliability of supply, which will enable California utilities to reduce energy costs to customers by about \$1.1 billion over the life of the project. Specifically, DPV2 will increase transmission capacity by 1,200 megawatts (MW), allowing California access to cost-effective energy in the southwestern United States, and thereby displacing higher-cost generation in California.

Development of new transmission facilities to areas where generation has been more easily sited and constructed may spur development of new competitive generation to provide further insurance against future electricity crises.

In addition, the CAISO conducted an independent review of DPV2 and also found the DPV2 project to be a necessary and cost-effective addition to the CAISO-controlled grid.<sup>1</sup> The CAISO Board approved the DPV2 project on February 24, 2005 and directed SCE to proceed with the permitting and construction of the transmission project, preferably to be completed by the summer of 2009.

As discussed in Section A.1.4 (CPUC Proceeding on the Economic Assessment of Transmission Lines) of this EIR/EIS, in addition to environmental issues, which are considered under CEQA/NEPA and are addressed in this EIR/EIS, the DPV2 project has raised other non-environmental issues for the CPUC's consideration, including the need for the project and ratemaking issues. Therefore, as a coordinated but independent proceeding, the CPUC has opened an Order Instituting Investigation (OII) (I.05-06-041) to consider appropriate principles and methodologies for assessment of the economic benefits of transmission projects, including DPV2, that are submitted for CPUC approval. Assigned Administrative Law Judge (ALJ) Charlotte TerKeurst stated that evidence regarding DPV2 should be received in two phases. Phase 1 would address economic methodology and need issues, with testimony to be received and evidentiary hearings to be held on a consolidated basis with I.05-06-041. Phase 2 in A.05-04-015 would address environmental and routing issues related to DPV2, with evidentiary hearings after the Draft EIR/EIS is released.

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<sup>1</sup> <http://www.caiso.com/docs/09003a6080/34/e4/09003a608034e440.pdf>.

On June 20, 2006, ALJ TerKeurst released a Proposed Decision on the Opinion on Methodology for Economic Assessment of Transmission Projects in the Phase 1 proceeding. As stated in the Proposed Decision, benefits of a proposed transmission project can be evaluated by comparing estimates of total costs that would be incurred without the proposed project and total costs if the proposed project is built. Such comparisons include assumptions about the resource mix, which may differ in the scenarios with and without the proposed project.

In addition to base case (most likely) scenarios, the effects of possible variations in key factors of the analysis, e.g., load growth or fuel prices, also should be considered in assessing likely economic benefits of a proposed project. In economic evaluations of transmission projects, there are three general categories of costs and benefits: (1) the change in total production costs, or energy benefits, (2) changes in other quantifiable economic benefits and costs not included in production cost analyses, and (3) factors whose expected economic effects cannot be monetized. These three categories are described below and in more detail in the Proposed Decision.

**Energy Benefits.** In evaluating a proposed transmission project, assessment of the distribution of potential benefits and costs among geographic areas and among various types of market participants is important. Because of the interconnected nature of the Western electricity system, the relevant geographic region affected by a transmission project may be much larger than the CAISO control area, particularly if the project is an inter-regional upgrade, such as DPV2. Four economic evaluations were submitted in the Phase 1 proceeding and all four determined energy benefits based upon production cost modeling of the entire Western Electricity Coordinating Council (WECC) area.

At the most basic level, energy benefits are the difference between the production costs to serve load in a region without the proposed transmission project and the lower production costs with the upgrade in service. Of course, while transmission upgrades are generally viewed as providing positive energy benefits, this may not be true for all projects or from all perspectives. A transmission upgrade will lower production costs if it increases market access to economic supply. However, there will be a redistribution of benefits among consumers, producers, and transmission owners. In particular, a transmission project that increases access to economic power will reduce costs to consumers, thus increasing the consumer surplus. At the same time, the project may reduce income for those generators not accessed by the transmission upgrade, reducing the producer surplus. It may also reduce transmission owners' congestion revenues and thus the transmission surplus. Thus, the energy benefits due to a transmission project consist of the net changes in consumer costs (consumer surplus), producer net income (producer surplus), and congestion revenues flowing to transmission owners or holders of transmission rights (transmission surplus). The sum of the changes in consumer surplus, producer surplus, and transmission surplus equals the change in energy production costs.

**Other Quantifiable Economic Benefits and Costs.** In addition to expected energy benefits and project costs, other potential economic benefits and costs of a proposed project may be identified and quantified and thus included in an economic assessment, including:

- Reductions in operating costs;
- Changes in system losses;
- Environmental benefits or costs;
- Capacity benefits;
- Capital and other costs or benefits resulting from resource substitution; and
- Increased transmission revenues from CAISO wheeling service and Existing Transmission Contracts.

These benefits and estimates attributable to DPV2 will be assessed in a later decision in A.05-04-015.

**Non-monetized Considerations.** There could also be considerations that may be relevant to a proposed transmission project and whose benefits or costs may not be quantifiable, including:

- Access to renewable resources;
- Non-monetized environmental impacts;
- Fuel diversity benefits;
- Reliability impacts;
- Enhanced system operational flexibility;
- Mitigation of market power, to the extent not quantified;
- Potential for increased reserve resource sharing; and
- Job creation or losses.

The Phase 1 Proposed Decision states that the Commission will consider such non-monetized aspects of the proposed project, along with other relevant factors, in assessing an applicant's CPCN request later in the process.

## 4. List of Commenters and Responses

This section provides responses to comments received during the Draft EIR/EIS public review period, which commenced on May 1, 2006 and ended on August 11, 2006. Responses to issues and concerns raised by several commenters are addressed in a set of General Responses (GR-1 through GR-3). More detailed responses are provided to individual comments in Sections A through E, which provide copies of the comments submitted on the Draft EIR/EIS, as well as comments provided during the Public Participation Hearings held on June 6 and 7 and July 24, 2006. Each comment set, including the transcripts from the Public Participation Hearings, is followed by the corresponding responses. Comment letters are presented chronologically, in the order of the date of the comment, followed by errata and minor text clarifications. The comments from the Applicant, SCE, are presented at the end of the comment letters as Comment Set E.

Comment letters are in the following categories:

- A. Public Agencies
- B. Community Groups, Non-Profit Organizations and Private Companies
- C. Private Individuals
- D. Public Participation Hearings
- E. The Applicant

Table 3 listed all parties that commented on the Draft EIR/EIS, the date of their comments, and the comment set number that defines the organization of responses in this Final EIR/EIS.

Comment Set A18

U.S. Department of the Interior, Fish and Wildlife Service



United States Department of the Interior

FISH AND WILDLIFE SERVICE

In Reply Refer To:  
R2/ES-EC  
CL 8-18

P.O. Box 1306  
Albuquerque, New Mexico 87103  
<http://ifw2es.fws.gov>

AUG 18 2006

Billie Blanchard, CPUC Project Manager  
California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, California 94102

Dear Ms. Blanchard:

The U.S. Fish and Wildlife Service (Service) would like to thank you for the opportunity to review the draft Environmental Impact Report/Environmental Impact Statement (EIS) for the proposed Devers-Palo Verde No. 2 (DVP) Transmission Line Project. You will find our comments on the document below. We look forward to working with you to resolve these issues in the future.

A18-1

General Comments

1. Based on the economic information provided, the benefit of the proposed project is questionable in light of its significant impacts. In several places the economic benefit of DVP2 is stated to be "\$1.1 billion over the life of the project" (Page A-16 is one example), but nowhere in the EIS is the life of the project specified. A time period of 49 years is mentioned in the Southern California Edison's (SCE) Cost Effectiveness Report (2004). An operational lifespan of only 49 years should be weighed carefully against the many permanent Class I impacts that will occur if the project is implemented. Several other statements raise concerns about the need for the project and its purported economic benefits:

"...uncertainty surrounding the SCE customer base, which could be diminished by direct access and municipalization trends..." (Page C-54).

"No new generation or major transmission facilities would be required if the DVP2 project is not constructed" (Page C-63).

"...DVP2 is primarily driven by SCE's desire to reduce energy costs to California customers, not by a need for improved reliability" (Page C-61).

"...constructing DVP2 was found to have a net negative impact of around \$16 to \$20 million per year to Arizona..." (SCE 2004:41).

The economic analysis was conducted under the assumption that the benefits of accessing Palo Verde generation in the southwest area will continue beyond 2012 (SCE 2004). Given the exponential growth of the Phoenix area, this assumption is questionable. The Cost Effectiveness Report also states that uncertainty beyond 2012 is so large that forecasting future generation patterns is too imprecise to be useful. This brings the \$1.1 billion figure into question.

## Comment Set A18, cont.

### U.S. Department of the Interior, Fish and Wildlife Service

Billie Blanchard

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Given that the project is almost purely economic in benefits, is not required for reliability of the power grid, has numerous Class I impacts, and will produce an economic benefit to consumers of only 61 cents per MWh (Page A-15), the No Action Alternative appears preferable to the proposed project.

A18-1 cont.

2. The Underground Alternative should be reexamined fully. This alternative meets all project objectives and might not be cost prohibitive over short distances. This alternative should be seriously considered for sensitive areas such as the Kofa National Wildlife Refuge (Kofa NWR); in fact, if this is a feasible alternative for the Kofa NWR, then placing the DPV1 project underground at the same time and removing the current DPV1 towers should also be considered. While there is significant potential for severe environmental impacts in the short term, these could be avoided or minimized with careful planning, and long-term impacts to recreation and wilderness values could be significantly less than under the proposed project. There are no known active faults crossing the Kofa NWR segment of the project, and the project is in an area of low seismic hazard. There are few areas of steep slope along the utility right-of-way (ROW) and the existing access roads should allow for underground placement with little additional disturbance. Placing the DPV2 (and possibly DPV1) underground from the Series Capacitor east of the Kofa NWR boundary to approximately Milepost 80 should be seriously considered and examined in this draft EIS.

A18-2

The proponent should also explore an alternative that is within the I-10 ROW east of Quartzsite and north of Kofa NWR. A combination of Sub-Alternate Route Nos. 1 and 4 could form an alternative that would result in minimal impact to natural resources and avoid a second power line on Kofa NWR. There would be impact to visual resources, but this impact would be less significant than on Kofa NWR or on a previously undisturbed route.

A18-3

The proponent fails to differentiate between the impacts of what a person expects to see driving down I-10 east of Quartzsite at 85 mph, versus a person attempting to obtain a high quality wilderness experience on Kofa NWR. There is a tremendous difference in scale between the two experiences.

3. We are concerned about the presentation and analysis provided for special status species, particularly those listed under the Endangered Species Act. In Section D.2 and Appendix 7, there are lists of special status species and discussions of potential effects to these plant and animal species. However, the organization of the Section and Appendix do not provide a clear summary of the potential for effects or a discussion of those effects for the listed species. In addition, the Section and Appendix do not recognize that some federally listed species, particularly the Yuma clapper rail (*Rallus longirostris yumanensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), and the candidate yellow-billed cuckoo (*Coccyzus americanus*) are also found on the Arizona side of the Colorado River. These species are also listed under the Arizona Wildlife of Special Concern. The draft EIS also cites an Arizona Endangered Species Act, but there is no such legislation.

A18-4

We suggest that the federally listed species be separated from the others of special concern and evaluated in one place in Section D.2 and Appendix 7. With the current organization, it is very difficult to assess the potential effects and proposed mitigation for these species. We understand that a separate section 7 consultation will be needed for this project; however, the discussion of the effects to listed species in the draft EIS should be clearly provided.

4. The draft EIS also does not adequately address the issues of crossing the Colorado River and the construction methods that would be needed to span the river. This information is important to assessing effects to aquatic and riparian bird species in the area. Also of concern is the additional effect to migratory birds from the placement of the new transmission line across the river. While the

A18-5

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

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new line would mirror the old in terms of location of towers, the width of the affected area would increase. Information on bird strike hazards from the existing line should be provided, as well as mitigation to reduce the effects of the additional lines. This is not fully discussed in the draft EIS in either Section B or D.2.

A18-5 cont.

Comments by Section

Executive Summary

5. Page ES-2. Although the Service issued a Compatibility Determination in 1989 for the portion of DPV2 that crosses Kofa NWR, the ROW Permit was never issued. Since the passage of the National Wildlife Refuge System Administration Act of 1966, the Service has processed its permits for all proposed uses on national wildlife refuges and this process has been closely tied to the compatibility process. The BLM ROW issued for DPV2 only applies to affected BLM lands, not to Kofa NWR.
6. Page ES-70 (Table ES-1). The Class I impact WR-2 also applies to Kofa NWR (Page D.5-27). There is no mitigation proposed to address WR-2; measures such as habitat improvements elsewhere on the refuge should be discussed with refuge staff before project commencement.
7. Page ES-73 (Table ES-2). Mitigation Measure B-16a (raven control plan) requires approval from the Service.

A18-6

A18-7

A18-8

Section A - Introduction

8. Page A-2. A ROW Permit is required to cross the Kofa NWR. See comment number 5.
9. Page A-16. What is the life of the project? See comment number 1.
10. Page A-17. The non-quantifiable benefits of DVP2 come with non-quantifiable costs. What about impacts of new generation? New generation development and subsequent growth that may be encouraged by DVP2 would bring significant additional environmental impacts. If non-quantifiable benefits are considered, non-quantifiable costs should be, as well.
11. Page A-18. A ROW Permit is required to cross the Kofa NWR. See comment number 5.

A18-9

A18-10

A18-11

A18-12

Section B - Description of Proposed Project

12. Page B-13. A ROW Permit is required to cross the Kofa NWR. See comment number 5. The Compatibility Determination will need to be updated or reissued.
13. Page B-46. The existing utility spur roads on Kofa NWR were left as unbladed 2-tracks until spring of 2006, when the roads were bladed. Blading the roads causes vegetation loss, soil erosion, fugitive dust/air quality problems, and encourages trespassing by refuge visitors. A 2-track road is sufficient for almost all vehicles, and the spur roads should be left in that state or allowed to return to it after construction, if blading is deemed absolutely necessary. Refuge staff should be consulted before blading of new or existing spur roads occurs.
14. Page B-69. Applicant Proposed Measures (APM) B-20—Permits for Take of Common Raven Nests, would be issued by the Service's Division of Migratory Birds, not Law Enforcement. Any raven control

A18-13

A18-14

## Comment Set A18, cont.

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on Kofa NWR must also be approved by refuge staff. Only one raven nest has been seen on the existing DPV1 power line within Kofa NWR. Raven control to protect desert tortoise habitat is not necessary on Kofa NWR.

A18-14 cont.

#### Section C – Alternatives

15. Page C-51. The Underground Alternative should be fully analyzed for Kofa NWR. See comment number 2.

A18-15

16. Page C-54. If the SCE customer base might diminish, why is the DPV2 project necessary? The ramifications of the Sun Valley Project should be addressed here. A new power plant constructed in California by SCE's parent company could address California's power. See comment number 1.

A18-16

17. Page C-56. Wind power deserved more attention in this EIS as an alternative. According to the wind power figures provided, a single 1.5 MW turbine could generate 2,100 MWh annually, almost twice the anticipated import capacity of DVP2. If the average capacity of a wind turbine is 750 kW (half of 1.5 MW) then theoretically only two turbines would be needed to generate the capacity desired for DPV2. Although wind turbines also have serious environmental impacts, it seems that at only 60 acres per turbine (120 acres total, of which only 6 acres would actually be occupied), wind power would be a far more environmentally friendly option than DPV2 at 1,052 acres of new area occupied (Tables B-1 and B-2).

A18-17

18. Page C-61.

- a) Section C.6.1.1. states that during the early years of DVP2 a surplus of generating capacity will be available in Arizona. SCE analyzed the benefits of excess generation from 2009 to 2012 in its Cost Effectiveness Report (2004). What will happen during the later years of DVP2? Given the exponential growth of the Phoenix area, how long will the surplus generating capacity in Arizona be available? It seems that the economic benefits of DVP2 would be sharply reduced if cheaper power from Arizona is no longer available for import into California. These issues should be addressed in depth. See comment number 1.
- b) Because "DVP2 is driven primarily by SCE's desire to reduce energy costs to California consumers, not by a need for improved reliability," we question the need for the project in light of the significant environmental impacts, especially if the "economic benefits would come mainly from lower energy costs based on the ability to access lower-cost energy supplies...particularly in Arizona," and the availability of this surplus Arizona generating capacity appears to be short-lived. See comment number 1.

A18-18

- c) Decreased generation at older, less efficient California plants is touted as a benefit of DVP2. However, if there will also be decreased generation at newer, more efficient plants in California as a result of DVP2 (Page C-62), this implies that there is still room for either further reductions in generation at older plants in California or reduction in generation in Arizona, which could offset the anticipated 200 ton increase in NO<sub>x</sub> emissions in Arizona.

A18-19

19. Page C-63. If no new generation or major transmission facilities would be required to meet California's energy needs if DVP2 is not constructed, is the project really necessary? See comment number 1.

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

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Section D.2 - Biological Resources

20. Page D.2-16. Bullfrogs (*Rana catesbiana*) are an introduced species in the Colorado River and are partially responsible for the decline of native Colorado River frogs, such as *Rana yavapaiensis*, the Lowland Leopard Frog. Bullfrogs are probably not the best amphibian species with which to categorize the Colorado River. A18-20
21. Page D.2-54. Buckhorn cholla is now considered to be *Cylindropuntia acanthocarpa*. A18-21
22. Page D.2-55. It should be clarified that although the Kofa NWR is located within and directly adjacent to the boundaries of the New Water Mountains Wilderness Area, the SCE ROW (and thus, the Kofa NWR segment of the proposed project) lies entirely outside of the wilderness area because the ROW predated the wilderness designation. However, because the ROW is immediately adjacent to wilderness area, the proposed project will still cause impacts to wilderness character and values. A18-22
23. Page D.2-94. Although bald and golden eagles, and their nests and eggs, are protected under the Migratory Bird Treaty Act (as migratory birds), these species are not specifically mentioned under this law as is suggested under the paragraph in Section D.2.4 referring to the Act. It is the Bald Eagle Protection Act of 1940 that specifically protects bald and golden eagles. A18-23
24. Page D.2-100. APMs B-5 and B-11 should be applied to Kofa NWR, as well, for protection of biological resources. A18-24
25. Page D.2-101. APM B-20—Common Ravens. See comment number 14. A18-25
26. Page D.2-102.
- a) SCE must provide measures to enforce APM B-29, such as coordinating with local law enforcement agencies to monitor traffic speed along routes, or provide temporary speed bumps on access roads. Past experience shows that contractors frequently ignore posted speed limits on Kofa NWR. A18-26
- b) APM B-30 should apply in Kofa NWR. Spur road blading should only be done if essential. See comment number 13. A18-27
27. Pages D.2-104 and 105. Table D.2-7 must be updated to reflect that Impacts B-11 and B-12 are, in fact, Class III impacts on Kofa NWR. Important sheep movement corridors occur between the Livingston Hills and western New Water Mountains, and also between the northeast Kofa Mountains and the eastern New Water Mountains (Cochran et al. 1984). During construction of the first DPV1 line, transmission line construction activities precluded normal ram crossings between the New Water Mountains and the Kofa Mountains/ Livingston Hills, although subsequent operation of the line did not appear to affect sheep crossings of the corridor (Smith et al. 1986). A18-28
28. Page D.2-110. Table D.2.8 should be updated to reflect that Impacts B-11 and B-12 are Class III on Kofa NWR and that Mitigation Measures B-9a and B-9b will be implemented on Kofa NWR for sensitive reptile species. A18-29
29. Page D.2-117. Mitigation Measure B-2b for noxious weeds should contain a provision that SCE will pay for treating invasive plant species that appear along the ROW after construction within a certain time A18-30



Comment Set A18, cont.

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period. Invasive species may be introduced inadvertently, despite preventative measures described, and may not appear until rainfall occurs, perhaps many months after construction is completed.

A18-30 cont.

30. Page D.2-157. Section D.2.6.1.10 should include a brief discussion of impacts to bighorn sheep movement corridors on Kofa NWR. Impacts B-11 and B-12 are Class III on Kofa NWR for bighorn sheep (see comment number 27). The assumption of No Impacts to movement corridors on Kofa NWR is erroneous.

A18-31

31. Page D.2-170. It cannot be said that the proposed project will not conflict with the management policies of Kofa NWR until the official Compatibility Determination is made. This determination will lead to a decision by the Refuge Manager/Regional Chief of the NWR System on whether or not the use is compatible with refuge purposes, and whether or not a permit should be issued to that proponent for the proposed project. The original 1989 Compatibility Determination signed by former Regional Director, Mike Spear, expired in 2004. A new compatibility determination has not been issued for the project.

A18-32

32. Page D.2-174. Raven Control Plan. See comment number 14.

33. Page D.2-272. Table D.2-14 should be updated to reflect that Mitigation Measures B-2a and B-2b will also be implemented on Kofa NWR, not BLM land only.

A18-33

34. Page D.2-280. Mitigation Measure B-16a. See comment number 14.

Section D.3 - Visual Resources

35. Page 3-57. APM B-5 (removal of construction debris) should apply to all construction areas, including those within Kofa NWR.

A18-34

Section D.4 - Land Use

36. Page D.4-14. A ROW permit was never issued by the Service in 1989 for the DPV2 Project. The 1989 Compatibility Determination will either be reissued or a new Compatibility Determination will be made. See comment number 5.

A18-35

37. Page D.4-25. The Proposed Project cannot be considered compatible with the Kofa NWR Comprehensive Management Plan until the Compatibility Determination is made.

A18-36

38. Page D.4-27. Table D.4-13. In about 2002, the existing maintenance or access roads leading from the El Paso Natural Gas Pipeline Road to each individual tower on the existing DPV1 power line were bladed in order to access the power line with a boom truck to wash accumulated dust off of the insulators. Since the time DPV1 was constructed in the early 1980s, native desert vegetation had returned and recovered within these old access routes. In 2006, the same access roads were upgraded from 2-tracks by blading without consulting refuge staff. For APM L-2, the refuge would like specific information on how existing and new tower maintenance roads will be maintained to reduce dust, erosion, and vegetation destruction. While it is understood that the access and spur roads must be maintained for project maintenance, 2-track roads provide adequate access for almost all vehicles and blading, especially on upland terraces, is not necessary. See comment number 13.

A18-37

39. Page D.4-28. Table D.4-14. The proposed project impact L-2 should be a Class I impact across Kofa NWR, not Class II. A second powerline would violate both significant land use criteria on Page D.4-26 and permanently damage the wilderness viewshed and recreation values. There is no way to mitigate this effect to less than significant.

A18-38

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

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40. Page D.4-33. Contrary to what is stated under Section 4.6.2, there would be long-term land use impacts from the proposed project on Kofa NWR, given the significant recreational use the area incurs. Impact L-1 would certainly occur from construction dust, noise, roadblocks, and vegetation destruction; Impact L-2 would indirectly affect wilderness and recreational users by generating noise and disrupting the viewshed. These issues are addressed in depth in Sections D.2, D.3, D.5, D.8, and D.11, but should be at least mentioned here, as well.

A18-39

Section D.5 - Wilderness and Recreation

41. Page D.5-6. Change "Sawtooth Mountains" to "Sawtooth Mountain" and "La Cholla Mountains" to "La Cholla Mountain" in the Copper Bottom Pass section.

A18-40

42. Page D.5-16. The text from Public Law 88-577, Section 4[d], cited on Page D.5-16, applies only to national forests. Wilderness within other Federal lands, such as national wildlife refuges, is not covered by this particular stipulation.

A18-41

43. Page D.5-17. The legislative history of Kofa NWR is incorrect. Kofa NWR was established by Public Law 94-223 in 1976, changing the status from a Game Range (established in 1939) to a NWR. The Arizona-Idaho Conservation Act of 1988 applies to the withdrawal of Kofa NWR lands from mineral leasing. Also applicable is the Arizona Desert Wilderness Act of 1990 (Public Law 101-628, 104 Stat 4472 and 4478), which established portions of the Kofa and New Water Mountains as designated wilderness.

A18-42

44. Page D.5-19. In regard to APMs B-3 and L-1, it should be strongly emphasized that no vehicular traffic may occur off of existing or new access/spur roads or outside the ROW on Kofa NWR. Because off-highway vehicle (OHV) use policies differ throughout the various segments of the proposed project, SCE must ensure that all workers clearly understand that off-road travel is prohibited on Kofa NWR.

A18-43

45. Page D.5-21 and D.5-22, Table D.5-3. Policies regarding OHV use on the Kofa NWR differ from those on BLM land. There should be no off-road vehicular travel or travel outside the existing ROW. See comment number 44.

A18-44

46. Page D.5-27. Although construction would occur outside of designated wilderness on Kofa NWR, the proposed project runs directly along the boundary on the New Water Mountains Wilderness. Therefore, contrary to the first paragraph in Section D.5.6.2, there would still be indirect visual impacts to the wilderness areas on Kofa NWR. The highest recreational use of the Kofa NWR occurs in October through March. If construction were timed to avoid these months, impacts to refuge visitors would be minimized.

A18-45

47. Pages D.5-27 and 28. Providing mitigation funds to Kofa NWR or a cooperator for (1) acquiring private land in-holdings within the refuge boundaries from willing sellers, (2) constructing bat-accessible steel gates on abandoned mines that are important bat habitat, and (3) rehabilitating abandoned mine sites and old roads on Kofa NWR may be mitigation measures for Impact WR-2. The proposed construction of DPV2 would remain a Class I impact because of its detriment to the refuge and New Water Mountains Wilderness. This mitigation would help make up for the loss of habitat caused by the construction of the DPV2, although it would not reduce the industrial development of the proposed project across the refuge. It must be clearly stated that any mitigation proposed would have no bearing on the compatibility determination completed by the Refuge Manager.

A18-46

## Comment Set A18, cont.

### U.S. Department of the Interior, Fish and Wildlife Service

Billie Blanchard

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#### Section D.7 - Cultural and Paleontological Resources

48. Page D.7-50. Kofa NWR requests copies of any cultural or paleontological inventories conducted in the Areas of Potential Effects (APE).

A18-47

#### Section D.8 - Noise

49. Page D.8-28. Impact N-2 is considered a Class I impact on Page D.8-22 and should be considered a Class I impact on Kofa NWR. Even though the Environmental Protection Agency (EPA) standard of 55 Day-Night Average Sound Level (Ldn) has not been specifically adopted for Kofa NWR, it is logical to use that standard to assess impacts given the recreational and wilderness uses of the refuge. The existing DPV1 line exceeds this noise level already and is the most notable noise source in the area. Because DPV2 would increase this noise level further, corona noise impacts should be considered Class I within the refuge. This distracting sound may discourage visitors to the refuge or to other public lands from camping or picnicking or spending time in the vicinity of the power lines outside of their vehicles.

A18-48

#### Section D.9 - Transportation and Traffic

50. Page D.9-10. There is no APM to address traffic congestion along the Crystal Hill Road during times of heavy visitor use. The Crystal Hill Road receives heavy visitor use during the winter months. SCE must provide adequate signage at refuge entrances and traffic coordinating personnel, if necessary.
51. Page D.9-16. Because of the remote nature of the refuge, it is possible that a helicopter rescue operation could occur during construction of the proposed project. SCE must devise a plan to ensure that conflicts would not occur between rescue helicopters and helicopters being used in construction of the powerline.
52. The utility ROW road from the west refuge boundary (Highway 95) to approximately milepost 79.5 (where the utility road joins the Crystal Hill Road) is not a designated public access road. Past experience has shown that construction traffic on the ROW road creates enforcement problems when refuge visitors see construction traffic on the ROW road and think it is open for public use. SCE must provide adequate signage at both ends of this road segment and work with refuge law enforcement (in conjunction with measures requested in comment number 26) to reduce inadvertent visitor use of the ROW road.

A18-49

A18-50

A18-51

#### Section D.10 - Public Health and Safety

53. Page D.10-13. SCE must submit a copy of Hazardous Substance Control and Emergency Response Plan to Kofa NWR, in addition to BLM, for review.
54. Page D.10-25. Exposure to electric fields should be addressed on Kofa NWR because of the rural characteristics of the refuge—there are few trees and no walls on the refuge to shield visitors from electric fields, and significant recreation is done on foot, outside of vehicles, which could expose visitors and staff to electric fields. There are several popular campsites within a few hundred feet of the existing DPV1 power line. The final EIS should address whether or not any individuals should camp overnight in these sites either at this time, or after the proposed construction of DPV2 takes place.
55. Page D.10-32. Kofa NWR uses two-way radios for routine and emergency communications and radio transmitters for radio tracking of animals during studies. SCE must provide data showing that the proposed project will not cause interference to radio use from electric or magnetic fields. Radio tracking frequencies generally range between 140 and 160 MHz; Kofa radio communications occur on 165 MHz (receiving) and 172 MHz (transmitting).

A18-52

A18-53

A18-54

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

Billie Blanchard

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56. Page D.10-41. Figure D.10-5 does not adequately represent the Magnetic Field Profiles for Kofa NWR (Area 17). The towers on Kofa NWR are different than those in Copper Bottom Pass; Figure D.10-7 for Area 15 fits the project profile better and this should be noted in the figure legends because the profiles are so different.

A18-55

57. Page D.10-55. New metal fencing was erected along the utility ROW in 2006 by El Paso Natural Gas. SCE and El Paso must coordinate to ensure that these new fences are grounded.

A18-56

58. Page D.10-56. Mitigation Measure PS-1b is especially important on Kofa NWR, which is dependent on radio for communications and research. SCE must resolve any radio interference issues to the refuge's satisfaction.

A18-57

Section D.11- Air Quality

59. Page D.11-40. Any chemical soil binders used on Kofa NWR must be nontoxic and biodegradable. SCE will submit labels and Material Safety Data Sheets (MSDS) for all soil binders for approval by Kofa NWR before any use of soil binders occurs.

A18-58

60. See comment number 13. Keeping spur roads as 2-tracks and blading only if essential would reduce fugitive dust and improve air quality.

Section D.12 - Hydrology and Water Resources

61. Page D.12-10. In regard to APM W-7, see comment number 13. Keeping spur roads as 2-tracks would reduce water runoff and associated erosion.

A18-59

62. Page D.12-28. SCE must submit a copy of Hazardous Substance Control and Emergency Response Plan Spill Prevention, Control, and Countermeasures Plan, and Storm Water Pollution Prevention Plan to Kofa NWR, in addition to BLM, for review.

A18-60

Section D.13 - Geology, Mineral Resources, and Soils

63. Page D.13-69. In regard to Mitigation Measure G-1a, SCE must submit a copy of the plan for identification, avoidance, and protection of sensitive desert pavement to Kofa NWR, in addition to BLM, for review.

A18-61

Section E - Comparison of Alternatives

64. Page E-15. The Environmentally Superior Alternative (ESA) cannot be found superior to the No Project Alternative based on the information in Section E.3. New generation facilities would be more efficient and be built to stricter environmental standards and might eventually replace older, less efficient power plants in California, thus, reducing net air emissions. New supply-side actions would also have environmental impacts, but with new technologies being developed it is possible these impacts could be less than the ESA (refer to comment number 17 as an example). The ESA also encourages energy overconsumption in California and discourages energy conservation. While Section E.3 is an attempt to quantify uncertain variables, the analysis is not complete enough to deem the ESA superior to the No Project Alternative.

A18-62

**Comment Set A18, cont.**

**U.S. Department of the Interior, Fish and Wildlife Service**

Billie Blanchard

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Section F - Cumulative Scenario and Impacts

65. Page F.2. Based on the defined project list approach (Page F.1), cumulative impacts would result from the addition of DPV2 to DPV1. Although no new projects are anticipated in La Paz County, the cumulative impacts of DPV2 added to DPV1 must be analyzed for Kofa NWR.
66. Page F.34. Based on the significance criteria for visual resources, the cumulative impacts of DPV2 and DPV1 on visual access to scenic resources must be analyzed.
67. Page F.36. Based on the significance criteria for land use, the cumulative impacts of DPV2 and DPV1 must be analyzed because of the close proximity of DPV1 and DPV2, and because designated wilderness is located within 1 mile of the ROW on Kofa NWR.
68. Page F.43. Based on the significance criteria for wilderness and recreation, the cumulative impacts of DPV1 and DPV2 must be considered on Kofa NWR. See comment number 67 and Page F.45: "As significant impacts have already occurred to the character and recreational value of the recreation areas located along the DPV1 line, operation of the proposed project, alone or in conjunction with other Proposed Projects, would contribute to a significant, cumulative effect to established recreation areas (Class I)."

A18-63

A18-64

Section G - Other CEQA and NEPA Requirements

69. Pages G-33 and 34. The significant and unavoidable Class I impact to visual, wilderness, and recreation resources on Kofa NWR remains a primary objection to the proposed project. See comment number 1.

A18-65

Section H - Mitigation Monitoring and Reporting

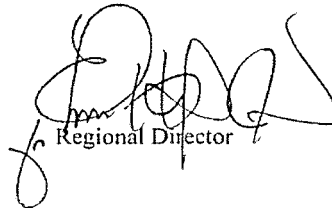
70. Page H-4. Although BLM is the lead agency for the proposed project on Federal lands, the Service retains authority to halt any construction, operation, or maintenance activity on Kofa NWR refuge lands if the activity has deviated from the approved project or mitigation.
71. Page H-5. SCE shall provide Kofa NWR, in addition to BLM, copies of project quarterly reports.

A18-66

A18-67

If you should have any questions regarding these comments, please contact the Field Supervisor or Lesley Fitzpatrick, Arizona Ecological Services Field Office, at 602-242-0210, for issues regarding endangered species, migratory birds, and habitat conservation; and the Refuge Manager, Kofa National Wildlife Refuge, at 928-783-7861, for issues regarding Kofa National Wildlife Refuge.

Sincerely,



Regional Director

**Comment Set A18, cont.**

**U.S. Department of the Interior, Fish and Wildlife Service**

cc: Field Supervisor, Arizona Ecological Services Field Office, Phoenix, AZ  
Refuge Manager, Kofa National Wildlife Refuge, Yuma, AZ  
Field Office Manager, Bureau of Land Management, North Palm Springs, CA  
NEPA Coordinator, Region 2, Albuquerque, NM

**Comment Set A18, cont.**

**U.S. Department of the Interior, Fish and Wildlife Service**

**References**

- Cochran, M.H., W.S. Gaud, and E.L. Smith. 1984. Studies of desert bighorn sheep (*Ovis canadensis mexicana*) on the Kofa National Wildlife Refuge. Final Report. E. Linwood Smith and Associates, Tucson, AZ. Submitted to Southern California Edison Co. and Arizona Public Service Co. 48pp.
- Smith, E.L., Gaud, W.S., Miller, G.D., and M.H. Cochran. 1986. Studies of desert bighorn sheep (*Ovis canadensis mexicana*) in western Arizona: Impacts of the Palo Verde to Devers 500kV Transmission Line. Final Report-Volume II. E. Linwood Smith and Associates, Tucson, AZ. Submitted to Southern California Edison Co. and Arizona Public Service Co. 51pp.
- Southern California Edison Company. 2004. Devers-Palo Verde No.2 Cost-Effectiveness Report. Submitted to the California Independent System Operator (CAISO) April 7, 2004. Updated March 17, 2005. 48pp including update.

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service



In Reply Refer To:  
R2/NWRS-SUPV  
CL10-9

United States Department of the Interior

FISH AND WILDLIFE SERVICE  
P.O. Box 1306  
Albuquerque, New Mexico 87103

OCT 12 2006

Ms. Billie Blanchard  
Project Manager, California Public  
Utilities Commission  
505 Van Ness Ave.  
San Francisco, California 94102

Dear Ms. Blanchard:

The U.S. Fish and Wildlife Service would like to thank you for the opportunity to review the Administrative Final--Environmental Impact Report/Environmental Impact Statement (EIR/EIS) regarding the proposed Southern California Edison Devers electric transmission line. Aspen Environmental, contractor for development of this EIR/EIS, addressed many of our concerns outlined in our comments on the draft EIR/EIS dated August 18, 2006. However, there are still three areas in which we continue to have concern and believe these are not adequately addressed. We believe the Purpose and Need discussion may have significant omissions. In the Alternatives section none of the alternatives that avoided Kofa National Wildlife Refuge (Refuge) were given full analysis and we believe many of the reasons given for doing so are insufficiently supported. We are also concerned that cumulative impacts may be inadequately addressed. Enclosed are our comments organized by the above categories. There are also minor corrections that we have noted under other comments.

We appreciate the opportunity to comment on the Final EIS. We would like to explore alternatives or mitigation measures with Southern California Edison that could be more environmentally acceptable. If you have any questions, or need any additional information, please contact Refuge Manager Paul Cornes at 928-783-7861.

Sincerely,

ACTING

Regional Director

Enclosure

cc: Refuge Manager, Kofa NWR

A18-68



Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

U.S. Fish and Wildlife Service Comments on the Administrative Final--Environmental Impact Report/Environmental Impact Statement (EIR/EIS), Proposed Devers-Valley #2 Transmission Line

A18-69

Purpose and Need/No Project Alternative/Environmentally Superior Alternative

Addressing purpose and need becomes essential to choosing alternatives, especially regarding such a large project with so many significant, unavoidable impacts. This becomes apparent in discussion of the No Project Alternative and selection of the Environmentally Superior Alternative. The rationale for choosing the 'Environmentally Superior Alternative' over the No Project Alternative states that the environmental impacts of the No Project Alternative would primarily result from operation of gas-fired turbine generators and new transmission lines, and that these impacts would be similar to those of the Proposed Project. However, this assertion is refuted in other places in the document:

"Development of other major transmission facilities or new generation triggered by the No Project Alternative would be unpredictable because this varies depending on a number of uncontrollable factors..." (Page E-15).

"No new generation or major transmission facilities would be required if the DPV2 project is not constructed" (Page C-64).

We recognize it is difficult to predict what impacts might be triggered in the future by the No Project Alternative. However, this leads again to the point that the 'Environmentally Superior Alternative' cannot be definitively shown to be environmentally superior to the No Project Alternative, especially when purpose and need for the project are considered in relation to the significant number of immitigable Class 1 impacts to sensitive areas such as Kofa National Wildlife Refuge (NWR).

Alternatives

A18-70

We note that additional information on various alternatives was provided in the EIR/EIS. However, none of the alternatives that avoided Kofa NWR were given full analysis and many of the reasons given for doing so are insufficiently supported. We are concerned that there is no alternative in the EIR/EIS that will avoid the significant environmental impacts associated with the Devers-Valley No.2 segment of the project. Specifically, the following three alternatives should have been addressed in more detail throughout the document:

1. Underground Alternative: The EIS states that if a short underground segment were considered to avoid a specific high impact area, underground technologies may not be cost prohibitive to construct and would meet all project objectives. It also mentions that a 25-mile underground 500kV line has been in service in Japan since 2000. It is true that a 3-foot continuous trench for 24 miles across the Kofa NWR would have significant initial environmental impacts, but these could be minimized by trenching in already disturbed areas of the right-of-way, an approach used successfully for underground gas pipelines that traverse the

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

refuge. Once the underground work is completed and the area rehabilitated, there would be few impacts to biological, visual, and wilderness resources.

A18-70 cont.

Currently, there is not enough information to justify discarding this alternative; therefore, this alternative deserves more thorough analysis to be legitimately compared to other alternatives. At a minimum, the proponent should address total area impacted, projected costs, reliability, hazards maintenance requirements, associated infrastructure, and maps or diagrams indicating possible placement of underground segment. Consideration should also be given to the concurrent placement of DPV# 1 underground through Kofa NWR.

2. Wind Power Alternative: Of all the alternative generation options discussed, wind power was the most feasible alternative and should have received a more thorough analysis in the document. The position against wind power, that impacts from the Proposed Project to transmit power from an existing power source would be less than the impacts from building transmission lines from a 'new' alternative energy source, is in need of revision. It does not recognize that the 'new' alternative energy source already exists (San Geronio Pass and Tehachahpi Wind Resource Areas are discussed in detail in the EIS), that energy development in these areas is expanding, and that new transmission lines will be required anyway. Creating more wind generation capacity and developing the associated transmission capacity required would distribute the development burden more equitably, in that the California power consumers who would benefit from the project would also bear the environmental and economic costs, as opposed to the Proposed Project, where the majority of costs would be borne by Arizona consumers who would receive little direct benefit from the project. Therefore, the Wind Power Alternative deserves more thorough analysis to be legitimately compared to other alternatives. The proponent should address potential development and transmission plans, impacted acres, and estimated costs.

A18-71

3. I-10 Right-of-Way Alternative: This alternative has been proposed by Kofa NWR and the Sierra Club. In the EIS it is assumed to be the same as SCE's North of Kofa NWR-South of I-10 Alternative, but this is incorrect. The I-10 ROW alternative would be a combination of Subalternate Routes 1 and 4 and would parallel Interstate 10 within the ROW for a greater distance than the North of Kofa/South of I-10 Alternative. In doing so, the I-10 ROW Alternative would place the Proposed Project in the already impacted I-10 ROW, would not significantly add to the length of the transmission line, and avoid the pristine areas that would be impacted by the North of Kofa/South of I-10 Alternative. This alternative should be examined fully from the beginning of the process.

A18-72

Cumulative Impacts

We noted that some of the impacts described as "cumulative" in the document are more appropriately considered as direct project impacts. There are two scenarios where what was termed as "cumulative impacts" are inadequately addressed for Kofa NWR.

A18-73

Biological Impacts: Cumulative impacts are considered significant if the Proposed Project contributes considerably to existing or identified interference with the movement of native resident or migratory wildlife species or with established native resident or migratory wildlife corridors. During construction of the first DPV1 lines, transmission line construction activities

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

precluded normal ram crossing between the New Water Mountains and the Kofa Mountains/Livingston Hills, although subsequent operation of the line did not appear to affect sheep crossing of the corridor (Smith et al. 1986). It might be reasonable to assume that the impacts of DPV2 alone on bighorn sheep would be similar, but it is difficult to judge what the cumulative impacts of DPV1 and DVP2 together will be on sheep or other animal movements without further study. Thus it cannot be said that there will be *no* cumulative impacts to biological resources in Arizona; it would be more precise to state there *may* be impacts to biological resources in Arizona, with some discussion of potential impacts to bighorn sheep.

Visual Impacts: In the EIS, the only adverse "cumulative impacts" addressed are those temporary impacts due to construction. Construction impacts would be more accurately described as "direct" impacts. The permanent visual impacts from the presence of a second powerline and expanded maintenance roads in a recreational area next to designated wilderness are completely disregarded. Kofa NWR is specifically managed for wilderness values, and although DPV1 is not in wilderness *per se*, it certainly impacts the wilderness viewshed. The argument that DPV1 has already introduced an industrial structure into the area does not account for the fact that despite design measures to minimize visual impacts, two powerlines still have a much greater visual impact than one. This is an unavoidable cumulative impact to an area where the pristine character should be retained as much as possible.

A18-74

Other Comments

A18-75

1. p. D.2-57. The underlined text is incorrect. No existing, designated utility corridor exists on Kofa NWR for DPV #2, although it is true that the proposed ROW is not within (but is immediately adjacent to) a designated wilderness area.

2. pp. D.2-177, 218, 271, 285. There are several instances where the EIS still states that a permit must be obtained from USFWS Division of Law Enforcement for raven control. It is USFWS Division of Migratory Birds that issues these permits. Please correct this in any reference to raven control.

A18-76

3. p. D.2-161. Although Table D.2-7 was updated, under Section D.2.6.10 there is still no mention of construction impacts to bighorn sheep on the Kofa NWR documented by Smith et al. (1986).

A18-77

4. p. D.5-5. Kofa NWR does have recreational facilities in the form of primitive campgrounds. The Crystal Hill primitive campground is located next to the Proposed Project.

A18-78

5. p. D.5-68. Under "Location" in Impact WR-3, "Kofa Area of Critical Environmental Concern" should be changed to "Kofa NWR"

A18-79

6. pp. D.9-16, 17. Impacts T-13 and T-14 and their associated mitigation measures T-13a and T-14a are under the wrong section. They should be moved from Section D.9.6.3 to Section D.9.6.2. These impacts and mitigation apply to the Kofa NWR segment, not the Kofa to Colorado River segment. These measures should also be added to Table D.9-13.

A18-80

Comment Set A18, cont.

U.S. Department of the Interior, Fish and Wildlife Service

7. p. D.10-57. We are still concerned about radio interference from corona or gap discharges; this has not been adequately addressed. Kofa NWR is dependent on its radios for law enforcement and emergency communications, and power lines cause static in telemetry receivers that makes it difficult, if not impossible, to track radio collared animals near them. The proposed mitigation measures are insufficient to ensure that urgent radio issues would be resolved quickly; we request that SCE coordinate with the refuge and take whatever design, planning, or shielding measures would be necessary to prevent radio interference, in addition to Mitigation Measures PS-1a and PS-1b.

A18-81

References

Smith, E.L., Gaud, W.S., Miller, G.D., and M.H. Cochran. 1986. Studies of desert bighorn sheep (*Ovis canadensis mexicana*) in western Arizona: Impacts of the Palo Verde to Devers 500kV Transmission Line. Final Report-Volume II. E. Linwood Smith and Associates, Tucson, AZ. Submitted to Southern California Edison Co. and Arizona Public Service Co. 51pp.

A18-82

Southern California Edison Company. 2004. Devers-Palo Verde No.2 Cost-Effectiveness Report. Submitted to the California Independent System Operator (CAISO) April 7, 2004. Updated March 17, 2005. 48pp including update.

## Responses to Comment Set A18

### U.S. Department of the Interior, Fish and Wildlife Service

- A18-1 The preference of the USFWS for the No Project/No Action Alternative over the Proposed Project is noted. The California Independent System Operator (CAISO) independent Economic Evaluation (February 2005) of DPV2 assumes that the economic life is 50 years, which is a typical life expectancy of a transmission line. The BLM Right-of-Way Grant is typically issued for 50 years, so this is one indication of the life of a project; however, there are many examples of transmission lines that are still operational more than 50 years after they were constructed. Please refer to Response GR-3 for a discussion of project need. The CPUC Administrative Law Judge is evaluating project need through economic modeling during the Phase 1 General Proceeding (I.05-06-041), and the Arizona Corporation Commission in a separate proceeding is also addressing project need. See also Response B3-4.
- A18-2 An underground alternative is described in detail in EIR/EIS Appendix 1, Section 4.4.3. Please refer to Response B8-8 regarding the feasibility and impacts of an underground transmission line alternative. Undergrounding the 500 kV transmission line approximately 28 miles from the Series Capacitor east of the Kofa NWR boundary (Milepost 52) through Kofa NWR to Milepost 80 would have much greater construction and operational environmental impacts than the Proposed Project, due to the requirements for continuous trenching and installation of numerous buried vaults. As a result, this alternative was not analyzed in detail in the EIR/EIS.
- A18-3 Several possible alternative routes passing north of the Kofa NWR are evaluated in the Alternatives Screening Report (Appendix 1) of the EIR/EIS. One of these routes, "SCE Subalternate Route 1" would follow the south side of Interstate-10. While it is true that this route would eliminate the new visual impacts in Kofa that would result from installation of the second transmission line, an I-10 alternative would introduce a new utility line with industrial character into a landscape presently lacking such facilities. As a result, views of the Plomosa Mountains and New Waters Mountains from Interstate 10 (I-10) would experience an adverse visual change, though it is true that views of the route would be of relatively shorter view durations due to the high rate of vehicular speed on I-10. However, the long-duration views of residents and recreationists using the La Posa Recreation Site and Long-term Visitor Area would also be adversely affected from substantially closer viewing distances. Therefore, siting the new line adjacent to the existing DPV1 line would avoid the proliferation of transmission line facilities across the landscape and the visual impacts on I-10 and the La Posa Recreation Site and Long-term Visitor Area as well.
- However, visual impacts were not the primary reason for elimination of the north of Kofa alternatives. The major reasons were the impacts to biological and cultural resources that would result from the extensive new disturbance of ground resulting from construction of new access roads, towers, and staging areas. These factors are documented in detail in General Response GR-1.
- A18-4 Please refer to Response B6-8 regarding the discussion of project impacts and mitigation. Table D.2-11 (Sensitive Wildlife with High Potential to Occur) identifies that Yuma clapper rail, southwestern willow flycatcher, and yellow-billed cuckoo have the potential to occur in both the Arizona and California sections of the project. In addition, Section D.2.6.1.6 (Threatened or Endangered Species) provides specific language identifying the potential for

these species in both Arizona and California (See Birds, Kofa National Wildlife Refuge to Colorado River and Colorado River to Midpoint Sub-Station).

Regarding the EIR/EIS' reference to an "Arizona Endangered Species Act," EIR/EIS authors are aware that there is no such law and have not found reference to it in the EIR/EIS. Section D.2.4 addresses laws and regulations, and does not include reference to this act under the sub-heading for Arizona.

A18-5 The EIR/EIS utilizes bird strike information and cites several references (APLIC, 1994, APLIC 1996, and Avery et al., 1978) regarding the potential for bird strikes in the EIR/EIS. However, detailed accounts of bird strikes at the Colorado River were not available. The EIR/EIS does indicate that impacts to bird species may occur from the proposed power lines. Mitigation measures identified in this EIR/EIS including B-15a (Utilize collision-reducing techniques in installation of transmission lines) and APMs would be utilized to reduce potential impacts to birds from transmission line collisions.

A18-6 Please refer to Responses A18-35 and A18-9. Executive Summary Section ES.1 on page ES-2 has been clarified as follows:

In 1989, the U.S. Fish and Wildlife Service issued a Certificate of Right-of-Way Compatibility for the portion of the DPV2 route that crosses the Kofa National Wildlife Refuge in Arizona, but a Right-of-Way Permit was never issued.

A18-7 Section D.5.6.2 states that Impact WR-2 (Operation would change the character of a recreation or wilderness area, diminishing its recreational value) in Kofa NWR would be significant and unmitigable (Class I) for the Proposed Project.

See Response A18-46 for a discussion of consultation with refuge staff prior to project commencement.

A18-8 Mitigation Measure B-16a (Prepare and implement a raven control plan) specifically identifies that SCE would have to gain approval from the USFWS to implement the plan.

A18-9 Please refer to Response A18-35. Table A-4 in Section A.3.5 (Permits Required for the DPV2 Project) of the Draft EIR/EIS states that the U.S. Fish and Wildlife Service would have the following jurisdiction and permitting authority for the following: Certificate of Environmental Compatibility for the Kofa NWR; Right-of-Way Grant (crossing Kofa NWR and Coachella Valley NWR); Consultation for Section 7 of the Endangered Species Act; and Habitat Conservation Plans (Riverside County). Regardless, Section A.1.1 on page A-2 of the Draft EIR/EIS has been clarified as follows:

In 1989, the U.S. Fish and Wildlife Service issued a Certificate of Right-of-Way Compatibility for the portion of the DPV2 route that crosses the Kofa National Wildlife Refuge in Arizona, but a Right-of-Way Permit was never issued.

A18-10 Please refer to Response A18-1.

A18-11 Section G.2 discusses growth-inducing effects of the Proposed Project, including growth related to the provision of additional electric power. As discussed in Response A18-1, the economic analysis of the project is occurring in a separate proceeding and is not within the

scope of CEQA or NEPA. It is highly speculative to assume that new generation would occur as a result of DPV2 especially because DPV2 has been found to be needed independent of any new generation. The Arizona Corporation Commission is responsible for power plant review and permitting within Arizona, which is independent of DPV2. The economics of building new generation outside of California is discussed in Section C.5.5.1 (under New Conventional Generation Alternative) of the EIR/EIS. Non-quantifiable environmental costs and benefits related to the Proposed Project have been analyzed in this EIR/EIS for 13 different issue areas in Sections D.2 through D.14.

- A18-12 Please refer to Responses A18-9 and A18-35. Section A.3 on page A-18 of the Draft EIR/EIS has been modified as follows:

Also, the USFWS issued a Certificate of Right-of-Way Compatibility (CRC) in 1989 for the portion of the proposed Devers-Harquahala 500 kV transmission line that crosses the Kofa NWR in Arizona, but a Right-of-Way Permit was never issued.

In addition, Section B.2.2.1 on page B-13 of the Draft EIR/EIS has been modified as follows:

The USFWS has indicated that they will re-evaluate the project and update or reissue the 1989 CRC and will need to issue a Right-of-Way Permit.

- A18-13 The EIR/EIS preparers agree that clearing roadways and grading spur roads increases the potential for impacts to vegetation and wildlife, and the EIR/EIS addresses this activity in the biological resources, air quality, hydrology and water quality, and geologic resources impact assessments in Sections D.2, D.11, D.12, D.13, respectively. Ground disturbance also has the potential to increase fugitive dust and result in off-site sediment transport. The EIR/EIS also provides specific mitigation addressing these issues and provides a mechanism to reduce impacts to less than significant levels. Further, within the Kofa NWR, Mitigation Measure B-1b (Coordinate tower placement with USFWS/BLM) requires SCE to coordinate with the refuge to reduce impacts from tower placement.
- A18-14 Comment noted. Please see Response A18-8.
- A18-15 Please refer to Response A18-2.
- A18-16 Please refer to Response A18-1. See also Response B8-4 regarding the New Conventional Generation Alternative. In addition, Distributed Generation is analyzed in Section 4.5.4 in Appendix 1 of the Draft EIR/EIS. As mentioned in the footnote at the bottom of page C-54, the Sun Valley Project is currently proposed by Edison Mission Energy, a subsidiary of Edison International (the parent company of SCE as well), and it is considered as a complement, not as a replacement to DPV2. According to the Technical Appendices (Appendix D, Resources) for the CAISO February 2005 Economic Evaluation of PVD2, the 500 MW Sun Valley generation project is not included in the 2008 or 2013 scenario. CAISO does not normally consider generation in their studies unless it is under construction, and Sun Valley has yet not received its Preliminary Staff Assessment or approval by the California Energy Commission. In addition, the nearby 800 MW Inland Empire Energy Center, which broke ground September 2005, is also not included in the economic modeling.

- A18-17 Renewable Generation Resources Alternatives, including wind technology, are evaluated in Section 4.5.2 of Appendix 1, Section C.5.5.2, and Executive Summary Section 2.3.4 and were eliminated from full consideration during the alternatives screening process. Not only was wind technology evaluated as an alternative on a general basis, but both the Tehachapi and the San Geronio Pass areas were specifically addressed in the alternatives discussion.

Use of renewable generation technologies would avoid the specific impacts associated with the construction and operation of the proposed DPV2 project, but *new transmission would still be required from the renewable generation locations*, creating impacts similar to those of the Proposed Project, which is proposed to transmit power from an already existing generation source.

In addition to the reliability and feasibility issues discussed in Appendix 1 and Section C, use of renewable resources would be inconsistent with the objectives of the proposed DPV2, which are focused on creating the ability for DPV2 to increase California's transmission import capability from the Southwest and enhance and support the competitive energy market in the Southwest.

- A18-18 Please refer to Response A18-1 and General Response GR-3 regarding project need. The CPUC Administrative Law Judge is evaluating project need through economic modeling during the Phase 1 General Proceeding (I.05-06-041). The Arizona Corporation Commission in a separate proceeding will also be addressing project need. See also Response B3-4.

- A18-19 Please see Response B3-14 for information on the "increase" of NOx emissions in Arizona, which would be offset by reduced operation of many power plants elsewhere. The power plant emissions reported in the EIR/EIS would occur at existing facilities that are presently permitted to generate power and send it wherever transmission accesses demand. The comment suggests that further reductions in generation at older plants in California may be realized, but this would be accomplished by either developing more new power plants in California or additional transmission infrastructure to import power, options that could involve a vast range of environmental impacts. Please see Response B18-1 regarding the purpose and need of the project.

- A18-20 Specific information describing sensitive amphibian species that may occur along the Colorado River are described in Section D.2.2.4 (Palo Verde Valley/Fishes and Amphibians). This section describes the potential for the presence of Colorado River toad and Couch's spadefoot toad.

- A18-21 This species name of the buckhorn cholla has been updated in EIR/EIS Section D.2.2.2 as shown below.

### **D.2.2.2 Kofa National Wildlife Refuge**

#### **Plant Communities and Sensitive Habitats**

The portion of the Proposed Project within the boundaries of the Kofa NWR contains species typical of upland and xeroriparian areas of Palo verde-Cactus-Mixed Scrub series of the Arizona Upland subdivision of the Sonoran Desert scrub biotic community. The dominant plant species observed in proposed ground-disturbing areas within the Kofa NWR segment of the Proposed Project during field reconnaissance include Creosote bush,



foothill palo verde, saguaro (*Carnegie gigantea*), desert ironwood, catclaw acacia, buck-horn cholla (*Cylindropuntia acanthocarpa*), and mesquite. Additional detail concerning these plant communities can be found in Section D.2.1.1.1.

- A18-22 The characterization of the project area and its proximity to wilderness areas has been modified in Section D.2.2.2 of the EIR/EIS as follows.

#### **Special Habitat Management Areas Overview**

The Kofa NWR segment of the Proposed Project is located within and directly adjacent to the boundaries of the New Water Wilderness Area as designated and managed by the Kofa NWR and the BLM. However, the proposed ROW is not a part of the Wilderness Area. The Proposed Project would traverse approximately 20 miles within the boundaries of the Kofa NWR, which is also within and directly adjacent to the boundaries of the New Water Mountains Wilderness Area. Additional detail on these can be found in Section D.2.1.1.4.

- A18-23 Section D.2.4 (Applicable Regulations, Plans, and Standards, Migratory Bird Treaty Act) of the EIR/EIS has been modified to accurately reflect the status of gold eagles and bald eagles. The Draft EIR/EIS did include a section describing the Bald Eagle Protection Act of 1940, specifically referencing both bald and golden eagles.

#### **Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 711) is a treaty signed by the United States, Canada, Mexico, and Japan that makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. The Act makes it unlawful to take, pursue, molest, or disturb species ~~including bald (American) and golden eagles~~, their nests, or their eggs anywhere in the United States.

- A18-24 Applicant Proposed Measures would apply to all areas of the ROW including the Kofa NWR. In addition, specific coordination with the Kofa is required in Mitigation Measure B-1b (Coordinate tower placement with USFWS/BLM), which would require SCE to coordinate with the Refuge to reduce impacts from tower placement. In addition, Applicant Proposed Mitigation Measure A-5 limits vehicle speeds to 15 mph on unpaved surfaces and Mitigation Measure B-29 limits off road speeds to 25 mph in tortoise areas.
- A18-25 Please see Response A18-8.
- A18-26 If the project is approved and all required permits are granted, approval documents will state which Applicant Proposed Measures and mitigation measures are adopted as conditions of approval. Adopted APMs, mitigation measures, and permit conditions identified would be monitored for compliance by a representative of the CPUC and BLM (including within the Kofa NWR, if monitoring by these personnel is approved by Kofa management for NWR lands). All non-compliance activity would be reported to CPUC/BLM and any affected agencies. Repeated non-compliance can result in work stoppage and violations of State or federal law would be reported to law enforcement agencies.

A18-27 Please see Response A18-13.

A18-28 Table D.2-7 (Impacts Identified-Biological Resources) of the EIR/EIS has been modified to reflect this comment.

**Table D.2-7. Impacts Identified – Biological Resources**

Impact No.	Description	Impact Significance
<b>Proposed Project</b>		
B-11	Construction activities would result in adverse effects to the movement of fish, wildlife movement corridors, or native wildlife nursery sites	No Impact, Class II, III

A18-29 Table D.2-8 (Summary of Impacts by Segment) of the EIR/EIS has been modified to reflect this comment.

Proposed Project Segment	Mitigation Measures <sup>1</sup>								
	B-10	B-11	B-12	B-13	B-14	B-15	B-16	B-17	
Kofa National Wildlife Refuge	Class II	<u>Class III</u>	<u>Class III</u>	Class III	Class III	Class II	Class II	Class III	B-1a, B-1b, B-2a, B-2b, B-5a, B-6a, B-7b, B-7c, <u>B-9a</u> , <u>B-9b</u> B-9c, B-9d, B-9f, B-15a, B-16a

A18-30 Mitigation Measure B-2a (Conduct invasive and noxious weed inventory) contains a provision for post-construction monitoring and eradication of noxious weeds. This plan will have to be submitted to the BLM, CPUC, ADGF, CDFG, and USFWS prior to construction of the project.

A18-31 Please see Responses A18-13 and A18-28.

A18-32 Section D.2.6.1.11 (Plans, Policies, and Ordinances) of the EIR/EIS has been modified to reflect this comment.

**Kofa NWR.** Construction activities may adversely affect biological resources within the Kofa NWR, which ~~would~~ may conflict with the Refuge's management policies and plans. Impacts in crossing of the Kofa NWR would be minimized through utilization of existing utility access (gas and transmission) roads during the construction and operational phases of the project (APM L-1). All vehicular traffic would be limited to approved access or spur roads. This APM would minimize disturbances to habitat, but direct impacts to species would still occur. Wildlife utilizing the habitats adjacent to the Proposed Project during construction activities would be disturbed by the associated noises and may relocate away from the activities. Impacts would be temporary and limited to the duration of the activities, thus species would be able to utilize the adjacent habitats following the activities. Impacts to some species would be more adverse than others, but overall impacts related to conflict with biological resources policies within the Kofa NWR would be considered less than significant (Class III). Based on the evaluation of impacts identified in this EIR/EIS, the Proposed Project may not conflict with management policies of the Kofa NWR. However, the determination of compatibility will be made by the USFWS in its Compatibility Determination for the Proposed Project.

- A18-33 Please see Response A18-8 regarding Ravens. Please see Response A10-4 regarding exotic plants.
- A18-33 Please see Response A18-8.
- A18-34 Please refer to Response E2-55 regarding Applicant Proposed Measures (APMs). APM B-5, which refers to Copper Bottom Pass specifically, is proposed by SCE as part of the Proposed Project and cannot be changed by the EIR/EIS team. However, the purpose of the EIR/EIS's mitigation measures is to create specific protective measures, which supersede APMs and are generally more stringent, detailed, specific, and enforceable. Mitigation measures are presented at the end of each issues area section (see Sections D.2 through D.14), and they address the requirements listed in APM B-5 and the measures apply to the entire project, including Kofa NWR. For instance, implementation of proposed Mitigation Measure B-9c includes implementing a Worker Environmental Awareness Program (see Section D.2, Biological Resources) and Mitigation Measure AQ-1a would require SCE to develop and implement a Fugitive Dust Emission Control Plan (see Section D.11, Air Quality).
- A18-35 We acknowledge that a ROW permit would be required from the USFWS for the portion of the Proposed Project across the Kofa National Wildlife Refuge (NWR) in compliance with 50 CFR 29.21, and as described in Section D.4.2.2.
- A18-36 The EIR/EIS team acknowledges that despite the initial plan and policy consistency evaluation that was conducted in Appendix 2 and within each issue area section, a compatibility determination must be made by the USFWS regarding the Kofa National Wildlife Refuge Comprehensive Management Plan. Section D.4.4 has been modified to reflect this.
- Based on the evaluation of federal land use plans, no conflicts were identified ~~the Proposed Project is consistent~~ with applicable land use plans and policies as described in Appendix 2.<sup>5</sup>
- <sup>5</sup> Although Section D.4.4 and Appendix 2 include an evaluation of the Proposed Project's consistency with applicable plans and policies, a determination of the compatibility of the project with these documents may also be made by each federal, state, and local agency.
- A18-37 As discussed in Section D.4.5.2, APMs were identified by SCE in its CPCN Application to the CPUC. No additional information was provided by SCE regarding the implementation of these APMs. If it was determined in each issue area section that an APM did not fully mitigate the impact for which it was provided, additional mitigation measures were recommended. The following mitigation measures were proposed in Section D.5.6.2 to require SCE to coordinate construction activities with the authorized officer of the Kofa NWR: Mitigation Measures WR-1a (Coordinate construction schedule and activities with the authorized officer for the recreation area) and WR-3a (Coordinate tower and road locations with the authorized officer for the recreation area).
- A18-38 In order to fully evaluate the effects of the Proposed Project on recreational resources, a separate section was introduced in this EIR/EIS to analyze recreational impacts (see Section D.5). As described in the introduction to Section D.4, the Land Use section defers to the analysis within the Wilderness and Recreation section where appropriate. Section D.4.6.2 explains that Impacts L-1 and L-2 do not apply to recreational resources such as the Kofa NWR, and that the evaluation of construction and operational impacts to the Kofa NWR is

fully discussed in Section D.5. See Section D.5.6.2, Impacts WR-1, WR-2, and WR-3, for a description of anticipated impacts to Kofa NWR that would occur during construction and operation of the project.

A18-39 See Response A18-38.

A18-40 Section D.5.2.3, page D.5-6, has been edited to reflect this comment.

- **Copper Bottom Pass.** Copper Bottom Pass is located adjacent to Copper Bottom Mine, and is surrounded by the Cunningham Mountains to the southwest, Sawtooth Mountains to the northwest, and La Cholla Mountains to the northeast. Located on BLM land, this pass is popular with backcountry recreationists.

A18-41 Section D.5.4, page D.5-16, has been edited to reflect this comment.

However, the Act includes a special provision for the establishment of transmission lines within across a WA that is located within a national forest. Section 4(d) provides the following text regarding these transmission lines:

A18-42 Section D.5.4, page D.5-17, has been edited as follows to reflect this comment.

Following the passage of the Act, the Kofa NWR was established in 1976 through the Arizona-Idaho Conservation Act of 1988 (Public Law 94-223 100-696 102 Stat 4571), which changed the status of this recreational resource from a game range (established in 1939) to a national wildlife refuge (USFWS, 2006). In addition, the Arizona Desert Wilderness Act of 1990 (Public Law 101-628, 104 Stat 4472 and 4478) established portions of the Kofa and New Water Mountains as designated WAs (USFWS, 2006). Management of the Kofa NWR continues to be subject to the National Wildlife Refuge System Administration Act of 1966 and its subsequent amendments.

A18-43 As stated in Response A18-37, if it was determined in each issue area section that an APM did not fully mitigate the impact for which it was provided, additional mitigation measures were recommended. The following mitigation measures were proposed in Section D.5.6.2 to require SCE to coordinate the construction and use of roads with the authorized officer of the Kofa NWR: Mitigation Measures WR-1a (Coordinate construction schedule and activities with the authorized officer for the recreation area) and WR-3a (Coordinate tower and road locations with the authorized officer for the recreation area).

A18-44 Specific policies regarding OHV use were not identified within the Kofa National Wildlife Refuge & Wilderness and New Water Mountains Wilderness Interagency Management Plan and Environmental Assessment, and as such are not specifically mentioned in the discussion on page D.5-21. See Response A18-43 regarding mitigation measures applicable to the construction and use of roads across Kofa NWR.

A18-45 Section D.5.6.2 describes the effects of the Proposed Project on the use of recreation and wilderness areas (WAs). As proposed, the project would not affect the use of recreational resources within the New Water Mountains WA. However, specific impacts pertaining to the existing visual character of a site (e.g., visual contrast, view blockages, skylining) are analyzed in Section D.3 (Visual Resources) of the EIR/EIS As described in Section D.3.6.2, visual impacts to travelers and recreationists along Pipeline Road and Crystal Hill Road would be significant and unavoidable.

Mitigation has been proposed in Section D.5.6.2 to avoid heavy recreational use periods within recreation areas (e.g., October through March). Mitigation Measure WR-1a (Coordinate construction schedule and activities with the authorized officer for the recreation area) would require SCE to coordinate the project's construction schedule across the Kofa NWR with the refuge's authorized officer.

- A18-46 Section D.5.6.2, Impact WR-2 has been revised, and Mitigation Measure WR-2a (Coordinate with USFWS to improve impacted areas within Kofa National Wildlife Refuge) has been added to reflect your comment.

In response to an agency comment from the USFWS (USFWS, 2006), Mitigation Measure WR-2a (Coordinate with USFWS to improve impacted areas within Kofa National Wildlife Refuge) has been proposed to minimize the loss of a recreational resource associated with the project. However, despite implementation of Mitigation Measure WR-2a, impacts to the recreational value of the Kofa NWR would remain significant.

**Mitigation Measure for Impact WR-2: Operation would change the character of a recreation or wilderness area, diminishing its recreational value**

**WR-2a Coordinate with USFWS to improve impacted areas within Kofa National Wildlife Refuge.** SCE shall coordinate with the USFWS to improve impacted areas within the Kofa National Wildlife Refuge (NWR). The implementation of improvements would be conducted at the discretion of the authorized officer for the Kofa NWR, and may include the acquisition of private land in-holdings from willing sellers within the refuge boundaries, and the rehabilitation of abandoned mine sites and old roads within the refuge. SCE shall document its coordination with the authorized officer of the Kofa NWR, and must demonstrate that negotiations and subsequent improvements have been conducted to the satisfaction of the USFWS. Documentation shall be submitted to the CPUC and the BLM at least 30 days prior to operation of the project.

~~No mitigation measures have been identified that would reduce the industrial development of the Proposed Project across the Kofa NWR.~~

Regarding potential impacts to bats, construction of the Proposed Project is not expected to result in adverse impacts to bats. There are no roosting or hibernacula sites expected to occur along the proposed ROW in the Kofa NWR. While potential impacts to roosting bats could occur in other sections of the ROW (i.e., Midpoint Substation to Cactus City Rest Area segment) which cross sections of steep rocky slopes, Mitigation Measure B-9h (Conduct pre-construction surveys for roosting bats) would avoid impacts to these species. Therefore, the placement of bat-accessible steel gates on abandoned mines in the Kofa NWR is not recommended at this time.

- A18-47 Class III cultural resources inventories have been completed for the proposed Areas of Potential Effect through Kofa. The BLM will provide copies of all relevant portions of the survey reports to the NWR, along with copies of all paleontological inventory and monitoring reports.
- A18-48 The Draft EIR/EIS (Section D.8.6.2) identifies the existing corona noise levels in the Kofa NWR above U.S. EPA target of 55 Ldn, and that the Proposed Project would aggravate this condition. The Significance Criteria (Section D.8.5.1) for noise impacts depends on

“... applicable noise restrictions or standards imposed by regulatory agencies” or whether “... the Proposed Project would result in a substantial permanent increase in ambient noise levels (more than five dBA) ...” Although the impact is considered to be adverse, an noticeable increase (more than 3 dB) would not occur, and no applicable noise restrictions or standards would be exceeded. New information provided by SCE in its comments on the Draft EIR/EIS (see Comment Set E3) shows that the area of impact would be somewhat smaller than was shown in the Draft EIR/EIS. Please also see Response B3-2 for more information on treatment of Kofa NWR as a noise-sensitive receptor.

A18-49 Mitigation Measure WR-1a (Coordinate construction schedule and activities with the authorized officer for the recreation area) in Section D.5 would apply to Kofa NWR and includes coordinating the schedule with the authorized officer, scheduling construction to avoid heavy recreational use periods, and locating construction equipment to avoid temporary preclusion of recreational activities. Mitigation Measure L-1a (Prepare Construction Notification Plan) in Section D.4 includes public notice of construction activities. Any road closures required for the Proposed Project (Impact T-1 in Section D.9) would require compliance with encroachment permits and thus impacts would be less than significant (Class III). Therefore, with the implementation of mitigation measures and compliance with encroachment permits would reduce impacts to less than significant levels in Kofa NWR and along Crystal Hill Road.

A18-50 A new impact, Impact T-13 (Helicopter use during construction could conflict with rescue helicopter use within the Kofa National Wildlife Refuge) has been added to Section D.9.6.2 (Transportation impacts within the Kofa NWR) and to Table D.9-18 (Mitigation Monitoring Program – Transportation & Traffic). A mitigation measure has been added, requiring that SCE coordinate helicopter operations with NWR staff to ensure that no conflicts occur with rescue operations.

**Impact T-13: Helicopter use during construction could conflict with rescue helicopter use within the Kofa National Wildlife Refuge (Class III)**

Because of the remote nature of the Kofa NWR, helicopters are sometimes used for rescue operations. This situation is not expected to occur frequently, and the impact is expected to be less than significant (Class III). However, in order to ensure that these rescue flights do not conflict with SCE's construction helicopter operations, Mitigation Measure T-13a is recommended.

**Mitigation Measure for Impact T-13: Helicopter use during construction could conflict with rescue helicopter use within the Kofa National Wildlife Refuge**

T-13a Coordinate helicopter operations with Kofa NWR personnel. SCE shall develop a plan defining coordination with Kofa NWR personnel to ensure that no conflicts occur between construction helicopter operations and NWR rescue helicopter operations. The plan shall be submitted to the Kofa NWR at least 60 days before the start of construction for review and approval.

- A18-51 A new impact, Impact T-14 (Construction use of roads could result in increased public use of unauthorized roads with the Kofa National Wildlife Refuge), has been added to Section D.9.6.2 (Transportation impacts within the Kofa NWR) and to Table D.9-18 (Mitigation Monitoring Program – Transportation & Traffic). The following mitigation measure (T-14a, Consult with Kofa NWR personnel) has been added, requiring that SCE coordinate with NWR staff to develop appropriate preventive measures to ensure that use of unauthorized roads does not occur.

**Impact T-14: Construction use of roads could result in increased public use of unauthorized roads with the Kofa National Wildlife Refuge (Class III)**

The utility road at the west Refuge boundary (Highway 95) to approximately Milepost 79.5 (where the utility road joins Crystal Hill Road) is not a public access road. The public may see construction vehicles using this road and think that it is available for public use. Public use of this road would result in an adverse, but less than significant impact (Class III). However, in order to prevent public use of this road, Mitigation Measure T-14a is recommended.

**T-14a Consult with Kofa NWR personnel.** SCE shall provide adequate signage at both ends of the utility road segment and work with Kofa NWR law enforcement personnel to prohibit public use of the road. SCE shall consult with Kofa NWR law enforcement personnel at least 60 days prior to the start of construction to develop appropriate measures to prevent inadvertent use of this road segment.

- A18-52 Mitigation Measure P-1a in Section D.10.6.1 (page D.10-13) and Table D.10-10 have been modified as follows:

**P-1a Develop Hazardous Substance Control and Emergency Response Plan.** A Hazardous Substance Control and Emergency Response Plan shall be prepared for the project, and a copy shall be kept on site (or in vehicles) during construction and maintenance of the project. SCE shall document compliance by submitting the plan to the CPUC, BLM, and USFWS, as appropriate, for review and approval at least 60 days before the start of construction.

- A18-53 Potential concerns about electric fields are described on Draft EIR/EIS page D.10-26: “At reasonably close distances, electric fields of sufficient strength in the vicinity of power lines can cause the same phenomena as the static electricity experienced on a dry winter day, or with clothing just removed from a clothes dryer, and may result in electric discharges when touching long metal fences, pipelines, or large vehicles. An acknowledged potential impact to public health from electric transmission lines is the hazard of electric shock: electric shocks from transmission lines are generally the result of accidental or unintentional contact by the public with the energized wires.”

Section D.10.12.1 describes the National Electrical Safety Code requirements for minimizing induced currents and shock hazards. This section also describes SCE’s process for responding to public concerns about nuisance shocks, and the potential for installation of additional grounding for metal objects, if required. Mitigation Measure P-2a (Implement grounding measures) specifies that SCE shall identify objects with potential for induced voltages, and implement grounding if required.

- A18-54 In Section D.10.12.2, Impact PS-1 (Radio and Television Interference) addresses the potential for the transmission line to cause radio interference. Mitigation Measures PS-1a (Limit conductor surface electric gradient) and PS-1b (Document and resolve electronic interference complaints) are proposed to ensure that SCE would respond to radio interference problems.
- A18-55 The comment is correct that Figure D.10-7 best represents the magnetic field profile for the Kofa NWR. A note has been added to Table D10-7 indicating this fact.
- A18-56 Please see Response A18-53.
- A18-57 Please see Response A18-54.
- A18-58 Mitigation Measure AQ-1a (Develop and Implement a Fugitive Dust Emission Control Plan) would require the soil binders to be non-toxic and would be subject to approval by USFWS. Mitigation Measure AQ-1a and the list of responsible agencies for this measure have been revised to clarify the role of USFWS in implementing the dust control plan. Please see Response A18-13 for information on the feasibility of retaining unbladed roads.
- A18-59 Please refer to Response A18-13.
- A18-60 Please response to A18-52 for revisions to Mitigation Measure P-1a to include USFWS as a cooperating agency and recipient of a copy of the Hazardous Substance Control and Emergency Response Plan (see also Section D.12.11, Table D.12-8 of the Final EIR/EIS). Mitigation Measures P-1b and P-4a in Section D.10 (the mitigation measure are also referenced in Section D.12, Hydrology and Water Quality, and Table D.12-8 of the Final EIR/EIS) and Table D.10-10 have also been modified as follows to include USFWS as a recipient of the required documentation:
- P-1b Conduct environmental training and monitoring program.** An environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper Best Management Practice (BMP) implementation, to all field personnel prior to the start of construction. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances) and shall include a review of all site-specific plans, including but not limited to, the project's Storm Water Pollution Prevention Plan and the Hazardous Substances Control and Emergency Response Plan. SCE shall document compliance by (a) submitting to the CPUC or BLM or USFWS, as appropriate, for review and approval an outline of the proposed Environmental Training and Monitoring Program, and (b) maintaining for monitor review a list of names of all construction personnel who have completed the training program.
- P-4a Prepare Spill Prevention, Countermeasure, and Control Plans.** To minimize, avoid, and/or clean up unforeseen spill of hazardous materials during operation of the proposed facilities, SCE shall update or prepare, if necessary, the Spill Prevention, Countermeasure, and Control plan for each substation, series capacitors, and the switchyard. SCE shall document compliance by providing a copy of the Spill Prevention, Control, and Countermeasures plans to the CPUC or BLM or USFWS, as appropriate, for review and approval at least 60 days before the start of operation.



- A18-61 Mitigation Measure G-1a in Section D.13.6.1 (page D.13-38) and in Table D.13-19 has been modified as follows to include the USFWS as a reviewer of the plan:

**G-1a Protect desert pavement.** Grading for new access roads or work areas in areas covered by desert pavement shall be avoided if possible. If avoidance of these areas is not possible, the desert pavement surface shall be protected from damage or disturbance from construction vehicles by use of temporary mats on the surface, or by other suitable means. A plan for identification and avoidance or protection of sensitive desert pavement shall be prepared and submitted to the CPUC~~and~~, BLM~~and~~ and USFWS for review and approval at least 60 days prior to start of construction.

- A18-62 Please refer to Response B3-5 for a discussion of the No Project/Action scenario. In addition, the No Project/No Action Alternative is presented in Section C.6, as required under both CEQA and NEPA, and is analyzed by each issue area section. This alternative is also presented in Executive Summary Section ES.4 and is compared to the Environmentally Superior/Preferred Alternative in Section E.3 and Executive Summary Section ES.5.

Section C.6.1.2 (Power Supply Issues Affecting the No Project Alternative) acknowledges that the No Project/Action Alternative would reduce generation from older and less efficient power plants in California. However, because the No Project/No Action Alternative would likely require construction of transmission lines with impacts similar to those described for the Proposed Project, as well as impacts of generation sources, it was found not to be superior to the Proposed Project (Environmentally Superior/Preferred Alternative). See also Response B8-4 regarding the New Conventional Generation Alternative.

- A18-63 Please refer to Response B8-23. The analysis of the impacts of the proposed DPV2 transmission line first considered the state of the existing environment, which contains the DPV1 line. While the DPV1 line was not specifically listed in the cumulative projects discussion, it was in fact considered in analysis, because its presence clearly affects the existing environment. Therefore, the cumulative impacts to visual resources discussed in Section F.3 include the DPV1 line.

- A18-64 Please refer to Response A18-63. The cumulative impacts to land use and wilderness and recreation resources (discussed in Section F.3) include the DPV1 line.

- A18-65 The commenter's objection to the Proposed Project based on significant (Class I) land use, wilderness and recreation, and visual impacts has been noted. See Response A18-7.

- A18-66 The following sentence has been added to Section H.4 on page H-4 to clarify the USFWS authority within Kofa NWR:

The CPUC~~and~~, BLM~~and~~ and the USFWS (within Kofa NWR and Coachella NWR lands) have the authority to halt any construction, operation, or maintenance activity associated with the Devers-Palo Verde No. 2 Transmission Line Project if the activity is determined to be a deviation from the approved project or adopted mitigation measures.

- A18-67 Section H.7.3 (General Reporting Procedures) on page H-5 has been modified to include the USFWS as a recipient of project quarterly reports:

The Applicant shall provide the CPUC and, BLM, and the USFWS with written quarterly reports of the project, which shall include progress of construction, resulting impacts, mitigation implemented, and all other noteworthy elements of the project.

A18-68 Please refer to Response A18-69 for a discussion of Purpose and Need, Responses A18-70, A18-71, and A18-72 for a discussion of alternatives suggested by the commenter, and A18-73 and A18-74 for a discussion of the cumulative scenario analysis for visual and biological resources.

A18-69 The commenter's preference for the No Project/Action Alternative has been noted. Please refer to General Response GR-3 for a discussion of project need.

The quotations referenced by the commenter from pages E-15 and C-64 of the Draft EIR/EIS are correct, though they are incomplete when taken out of the context of the surrounding discussion. Construction of new generation and transmission facilities would be unpredictable, because this project is considered by SCE and the California Independent System Operator to be needed because of its economic benefits (i.e., providing access to lower cost generation), new facilities would not be immediately required to support electric system reliability. However, as required by CEQA and NEPA, EIR/EIS Section C.6 (No Project/No Action Alternative) discusses what would be reasonably expected to occur in the foreseeable future if the project were not approved. A reasonable assumption, without undue speculation, of the events or actions that would be reasonably expected to occur in the foreseeable future without DPV2 was developed in Section C.6 and then compared to the Environmentally Superior/Preferred Alternative in Section E.3. As a result, the construction and long-term operational impacts of alternative transmission lines and generators were definitively found to have greater environmental impacts than the Environmentally Superior/Preferred Alternative as is stated in the EIR/EIS.

The events or actions that are reasonably expected to occur in the foreseeable future without DPV2 include the following:

- The existing transmission grid and power generating facilities would continue to operate without being reduced until other major generation or transmission projects could be developed.
- Continued growth in electricity consumption and peak demand within California is expected. To serve this growth, additional electricity would need to be internally generated or imported into California by existing facilities. Net air emissions reductions caused by reducing generation from older and less efficient power plants in California and increasing generation from higher-efficiency power plants outside of California would not occur.
- A continuation of baseline demand-side or supply-side actions may be expected to occur. Demand-side actions include additional energy conservation or load management. Supply-side actions can include accelerated development of generation, such as conventional, renewable, and distributed generation, or other major transmission projects. These are described in more detail below because they could lead to new adverse environmental effects. Development of other major transmission facilities or new generation triggered by the No Project Alternative would be unpredictable because this varies depending on a number of uncontrollable factors (e.g., energy cost, need, market forces).

The text on Draft EIR/EIS page C-64 in Section C.6.2.2 (Continuation of Supply-Side Actions) states that "no new generation or transmission facilities would be required if the DPV2 project is not constructed;" however, the paragraph continues, saying that "the No Project Alternative could, however, accelerate development of alternate facilities. The specific configuration of alternate facilities would vary depending on a number of uncontrollable factors (e.g., energy cost, need, market forces)." These facilities could include unchanged or increased dependence on existing generation in California, accelerated development of other major transmission projects or upgrades, and/or accelerated development of new generation in California or elsewhere. CEQA and NEPA require an assessment of impacts of the No Project/No Action Scenario, and this assessment is presented in each environmental issue area discussion in Section D of the EIR/EIS.

In addition, the text on Draft EIR/EIS page E-15 in Section E.3 (No Project Alternative vs. the Environmentally Superior Alternative) says that "development of other major transmission facilities or new generation triggered by the No Project Alternative would be unpredictable." The next paragraph goes on to state that "the environmental impacts of the No Project Alternative would primarily result from operation of gas-fired turbine generators and new transmission lines. These long-term operational impacts include substantial air emissions and ongoing noise near the generators, as well as visual impacts of the new transmission lines and generators depending on their locations. Therefore, because the No Project Alternative could also require construction of transmission lines with impacts similar to those described for the Proposed Project, as well as impacts of generation sources, the No Project Alternative is not found to be superior to the Environmentally Superior Alternative..."

A18-70      Installation of the 500 kV transmission line underground would reduce the visual impacts of the new transmission line. However, there are other significant impacts associated with construction and operation of an underground transmission lines that must be considered, as well as technical challenges that must be overcome before implementing such a system. First, the feasibility of such a line is questionable: a 500 kV underground system exceeding 20 miles in length exists only one place in the world, and this Japanese installation is in an urban area where the line is completely encased in a concrete vault.

For a 500 kV underground installation, various aboveground facilities would be needed in addition to the underground components. Visible aboveground components associated with a 500 kV underground transmission line include a transition station at each end of the underground segment, approximately 80 feet high and with a footprint of approximately 2 to 3 acres, at each end of the underground segment to transfer the 500-kV transmission lines from overhead to underground and vice versa. These transition stations are similar to a small electrical substation and would be highly visible facilities that would create visual contrasts with natural landscapes in the project area.

In addition, the ground disturbance required for installation of an underground transmission line of this voltage would be extensive. The comment references a 3-foot wide trench: this may be adequate for a 115 kV underground line, but a 500 kV line would require clearance of approximately an 85-foot wide path through the entire Refuge (described in more detail below).

The underground transmission line would also need to be served by an all-weather access road, and access hatches for underground vaults would be needed every 1,200 to 1,800 feet for each of three parallel sets of buried transmission cable.

Technical issues associated with installing a 500 kV transmission line underground include: (1) selection of appropriate and feasible 500 kV technology; (2) installation considerations, which may effect the reliability of the system (e.g., seismic conditions and slopes), and the area of impact; and (3) maintenance requirements.

**Feasibility.** As discussed in detail in Section 4.4.3 of Appendix 1 of the EIR/EIS, there are four underground technologies for 500 kV transmission that are commercially available; however, of the four underground cable technologies, the solid dielectric ("XLPE") technology is considered the preferred technology for underground construction. XLPE underground transmission cable has been available for system voltages up to 138 kV since the early 1970s; however, until recently there was a lack of widespread acceptance at higher voltages in this country because of reliability problems with these "first generation" systems. XLPE systems have recently begun to have installations with long enough service life to increase utility confidence in their reliability. Currently, the number of 220 kV solid dielectric cable installations in the United States is increasing with approximately 50 circuit miles in service.

The first long-distance 500 kV XLPE lines were installed in Tokyo, Japan, in 2000. As only one 500 kV XLPE system has been installed in the world, and was specially installed in a cable tunnel (and ducts), XLPE technology has scant operating history that can serve as a basis for demonstrating reliability at this voltage. However, XLPE cable has been successfully installed and operated for long lengths at lower voltages and has been shown to be technically feasible for a 500 kV installation since the fundamental technology is the same.

**Installation Considerations.** Underground transmission lines are more at risk for damage from earthquakes and landslides than overhead lines. A seismic event would expose the buried cable to potential fault rupture, local ground cracking, and groundshaking, which could damage the underground cable and render it inoperable. As such, serious reliability concerns exist for underground installations near an active fault zone.

In addition to earthquakes and landslides, burying cables within a slope for any significant distance is of concern as there is a risk of movement of the cable down slope due to either gravity or contraction and expansion effects. While there are no definitive limitations on maximum gradients for installations within slopes and the terrain within Kofa NWR is relatively flat, cable grappling or retention systems would need to be considered if the cable slope is in excess of five percent for distances greater than 500 feet. Significant cable slopes with cable retention systems are rarely used due to the potential for the attachments to introduce physical, electrical, and thermal stress points that can result in cable failures. As such, system reliability becomes an issue when dealing with sloped terrain.

Another consideration for underground cables is the area of impact required for installation. The primary infrastructure components for underground transmission lines are substantially different than for overhead lines and include:

- XLPE cables and duct banks
- splicing vaults
- thermal fill to cover the buried facilities
- transition stations (described above).

A 500 kV XLPE transmission line typically consists of three independent cables per phase. For an underground segment, each phase (each phase consists of three cables for a total of 9 cables) would be individually buried in a duct bank. A set of three splicing vaults, one for each set of cables, would be buried every 1,200 to 1,800 feet. Each underground splicing vault would measure approximately 10 feet by 10 feet by 35 feet. Up to eight feet of thermal fill may be required over the top of all buried facilities and infrastructure (duct banks and splicing vaults). During construction an approximately 85-foot wide area would be disturbed to install the three duct banks and associated splicing vaults. Not only would underground construction have greater biological impacts, but would also greatly increase traffic impacts associated with truck trips to remove debris and import materials, such as concrete for the duct banks and thermal backfill, and increase the overall length of construction (and other associated impacts, such as noise).

**Maintenance.** Maintenance of underground transmission lines is more difficult than overhead lines because when a problem occurs underground it can be very difficult to identify the exact location of the problem. When the problem is located, the segment (length between two splicing vaults) of cable on which the problem occurred must be removed and replaced. This process involves additional excavation and construction. In addition to the environmental implications, this process would cause circuit restoration to take substantially longer than with overhead transmission lines. Furthermore, underground lines have been found to have a shorter overall lifespan than overhead lines due to the degradation of the insulation surrounding the cables. Replacement activities, assuming an empty parallel duct is not provided, would include removal and replacement of the cable system, which would have substantial environmental consequences.

**Cost Considerations.** As a result of the considerable construction activities associated with underground construction of transmission lines, the associated costs are substantially greater than the cost of installing overhead transmission lines (approximately 6 to 10 times more expensive). The cost of undergrounding the transmission line for long distances could be cost-prohibitive. Furthermore, these costs would be passed on to SCE customers as approved by the Federal Energy Regulatory Commission (112 FERC 16,014, Docket No. EL05-80-000).

The following text has been added to EIR/EIS Section 4.4.3 in Appendix 1 for further discussion of environmental and technical disadvantages related to 500 kV underground transmission line:

**Environmental and Technical Disadvantages by Technology**

In addition, the disadvantages of each of the four underground technologies are discussed individually below.

**HPFF Underground Transmission System.** The primary disadvantages of this underground transmission system are:

- Larger volume of dielectric fluid in the cable pipe increases potential for a larger release to the environment compared to other cable types (especially near water bodies).
- Pressurizing or pumping plant is required to maintain dielectric fluid pressure under all load conditions. These plants would require secondary sources of power at the distribution voltage level.

- Cable system requires significantly more maintenance than solid dielectric cables due to the routine maintenance associated with the fluid pressurization plants and the pipe cathodic protection equipment.
- Cable system requires at least one day to restore service if there is a total loss of dielectric fluid pressure (SCE PEA, p. 3-49).
- Current carrying capacity of the cable system is lower than other cable systems with the same conductor size due to the close proximity of the conductors and magnetic losses in the steel pipe.
- Relatively high charging current and dielectric losses. For long lines, facilities may be required to compensate for the capacitive charging current.
- Availability of skilled cable splicers for this technology is becoming a problem.
- Multiple cables and duct banks would be necessary for the required power transfer capability.

**SCFF Underground Transmission System.** The primary disadvantages for this cable type are:

- Historically higher maintenance than HPFF or solid dielectric cable systems.
- More complex to design and operate compared to solid dielectric cable systems.
- Concerns about dielectric fluid leaks.
- Relatively high charging current and dielectric losses.
- Higher magnetic fields than HPFF cable systems.
- Availability of skilled cable splicers for this technology is becoming a problem.
- Multiple cables and duct banks would be necessary for the required power transfer capability.

**XLPE Underground Transmission System.** The primary disadvantages of extruded dielectric cables are:

- Does not have the proven long-term reliability record similar to HPFF or SCFF cable systems for system voltages of 345 kV and above.
- Requires extremely good manufacturing process quality control.
- Special skills and proprietary equipment associated with the cable supplier may be required for cable splicing.
- Multiple cables and duct banks would be necessary for the required power transfer capability.

**CGTL Underground Transmission System.** The primary disadvantages of compressed-gas insulated transmission systems are:

- Relatively high cost.
- Environmental concerns about releases of SF6 gas to the environment.
- A relatively high amount of field assembly work is required.
- Less flexibility in avoiding other underground obstacles.
- Larger right-of-way required compared to other underground cable systems.
- System reliability is sensitive to contaminants introduced during field assembly.

**Conclusion.** In light of the intensive ground disturbance, maintenance, and reliability concerns related to underground construction discussed above, as well as the additional cost, underground construction of a 500 kV transmission line, except under specific conditions and for short distances, is generally not used in practice. It is not considered to be feasible in the Kofa National Wildlife Refuge.

A18-71 A wind power alternative is discussed in Section 4.5.2 (Renewable Generation Resources) in Appendix 1 and in Section C.5.5.2 of the EIR/EIS. As is stated in the EIR/EIS, the available land for new wind turbines in the San Geronio Pass is nearing capacity and thus the potential for new wind generation in that location is low. In the Tehachapi area, there is not now adequate transmission capacity to deliver potential future wind energy, but SCE is currently evaluating development of an extensive transmission system in that area. In addition to the reliability and feasibility issues discussed in Appendix 1, Section 4.5.2, use of wind power would be inconsistent with the objectives of the proposed DPV2, which are focused on creating the ability for DPV2 to increase California's transmission import capability from the Southwest and enhance and support the competitive energy market in the Southwest. Therefore, wind energy was eliminated from detailed consideration in this EIR/EIS. See also Response A18-17.

A18-72 An Interstate 10 alternative similar to a combination of Subalternate Routes 1 and 4 was evaluated as the SCE North of Kofa NWR-North of I-10 Alternative in EIR/EIS Appendix 1, Section 4.2.5. This section of the Alternatives Screening Report, along with General Response GR-1 above, presents detailed discussion of the reasons that a transmission line route north of the Kofa NWR would have greater impacts than use of the existing ROW through Kofa.

The EIR/EIS did not specifically consider an alternative that would parallel I-10 within the highway right-of-way, because the Arizona Department of Transportation (ADOT) would have to issue an encroachment permit for this use. Any alternative that would occupy an ADOT Highway ROW would be subject to the "Arizona Encroachments in Highway Rights of Way" (Rule No. R-17-3-702) as well as additional provisions required to obtain ADOT approval for a lease of a longitudinal corridor. However, according to the ADOT Guide For Accommodating Utilities On Highway Rights-Of-Way (1998),<sup>1</sup> "New longitudinal electric lines will *not* be permitted to be installed within the control of access<sup>2</sup> lines in any location other than within ADOT established utility corridors except in special cases." The Arizona Department of Transportation defines "special cases" very narrowly. Only an underground lease would be considered within the "control of access" area, and this has been done only in one case (in an urban area). An overhead line would not be allowed).<sup>3</sup> See Response A18-70 for a discussion about the environmental and feasibility issues associated with undergrounding the DPV2 line. Text has been modified to include this information in Section C.5.2.1 and Section 4.2.4 in Appendix 1.

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<sup>1</sup> Arizona Department of Transportation, Utility and Railroad Engineering Section. 1998. Online at [http://www.azdot.gov/Highways/utilities/pdf/guide\\_a.pdf](http://www.azdot.gov/Highways/utilities/pdf/guide_a.pdf). June 12.

<sup>2</sup> "Control of Access" refers to locations where owners or occupants of abutting lands and other persons have no legal right of access

<sup>3</sup> Personal Communication between John McNary (Arizona Department of Transportation) and Susan Lee (Aspen Environmental Group) on October 20, 2006.

By distancing the line from the Interstate 10 ROW then the route would traverse less disturbed habitat and impacts would be similar to those evaluated and eliminated from consideration in Sections 4.2.4, 4.2.5, and 4.2.6 of Appendix 1 (see also General Response GR-1).

- A18-73 Please refer to Response B8-23. The analysis of the impacts of the proposed DPV2 transmission line first considered the state of the existing environment, which contains the DPV1 line. While the DPV1 line was not specifically listed in the cumulative projects discussion of the Draft EIR/EIS, it was in fact considered in analysis, because its presence affects the existing environment. Section F.2.1, Cumulative Projects, has been modified to add discussion of the DPV1 project. In addition, the Analysis section in Section F.3.1 (Biological Resources) has been modified as follows to include a discussion of wildlife movement related to the cumulative effect of both the DPV1 and DPV2 lines:

In the Arizona portion of the Proposed Project, after applying the significance criteria to the projects in the cumulative scenario, no significant cumulative impacts are found with regard to biology. Though it is difficult to judge the cumulative effects of DPV1 and DPV2 together on bighorn sheep or other animal movements without further study, cumulative impacts to biological resources could occur. During construction of DPV1, transmission line construction activities precluded normal ram crossing between the New Water Mountains and the Kofa Mountains/Livingston Hills, however, subsequent operation of the line did not appear to affect the sheep crossing of the corridor.<sup>1</sup> Mitigation measures implemented as part of the Proposed Project are designed to reduce any impacts to biological resources and wildlife movement to less than significant levels and it is assumed that the operational impacts of the line both individually and cumulatively would be less than significant as well, similar to the findings by Smith et al. (1986). Therefore, the cumulative scenario does not contribute considerably to any existing or identified impacts on habitats, species, protected wetlands, species migration or migration corridors, or use of wildlife nursery sites.

<sup>1</sup> Smith, E. L., Gaud, W. S., Miller, G. D., and M. H. Cochran. 1986. Studies of desert bighorn sheep (*Ovis canadensis mexicana*) in western Arizona: Impacts of the Palo Verde to Devers 500 kV Transmission Line. Final Report-Volume II. E. Linwood Smith and Associates, Tucson, AZ. Submitted to Southern California Edison Co. and Arizona Public Service Co. 51pp.

- A18-74 Please refer to Response B8-23. The analysis of the impacts of the proposed DPV2 transmission line first considered the state of the existing environment, which contains the DPV1 line. While the DPV1 line was not specifically listed in the cumulative projects discussion, it was in fact considered in analysis, because its presence affects the existing environment. Section F.2.1, Cumulative Projects, has been modified to add discussion of the DPV1 project. Because the installation of the DPV2 transmission line within the Kofa NWR was found to be a significant impact in itself, a significant cumulative impact would also occur. This had been stated in the Draft EIR/EIS in Section F.3.2, but specific reference was not made to Kofa. The Analysis section in Section F.3.2 (Visual Resources) has been modified as follows to include a discussion of the specific cumulative effect of both the DPV1 and DPV2 500 kV lines through Kofa NWR:

Within Kofa National Wildlife Refuge, the DPV2 line would result in a considerable cumulative visual impact when viewed in the context of the existing DPV1 line. The DPV1 line on its own contributes substantial view blockage or visual impairment,



industrial character and visual contrast, which in turn diminish the visual quality of the Kofa landscape in the vicinity of the route. When placed adjacent to DPV1, the visual effects of the DPV2 line (increased visual contrast, structural prominence and, view blockage) would substantially exacerbate the existing adverse visual impacts of the existing DPV1 line, resulting in a considerable cumulative visual impact.

- A18-75 The text modification in Section D.2.2.2 and in Response A18-22 has been modified to delete the reference to a designated utility corridor. The sentence now reads:

The Kofa NWR segment of the Proposed Project is located within and directly adjacent to the boundaries of the New Water Wilderness Area as designated and managed by the Kofa NWR and the BLM. However, the proposed ROW is not a part of the Wilderness Area.

- A18-76 References related to raven control permits and the "USFWS's Law Enforcement Division" have been changed to the "USFWS's Division of Migratory Birds" throughout Section D.2 of the EIR/EIS, including in all impact discussions related to Impact B-16 (Operation of the transmission line may result in increased predation of listed and sensitive wildlife species by ravens that nest on transmission towers), in APM B-20 (see Table D.2-6), in Table D.2-14 (Mitigation Monitoring Program – Biological Resources), and as is shown in Mitigation Measure B-16a:

**B-16a Prepare and implement a raven control plan.** SCE shall prepare a common raven control plan that identifies the purpose of conducting raven control, provides training in how to identify raven nests and how to determine whether a nest belongs to a raven or a different raptor species, describes the seasonal limitations on disturbing nesting raptors species (excluding ravens), describes the procedure for obtaining a permit from the USFWS's Law Enforcement Division of Migratory Birds, and describes procedures for documenting the activities on an annual basis. SCE shall gain approval of the plan from the USFWS's Law Enforcement Division of Migratory Birds. SCE shall provide this raven control plan to all transmission line companies that conduct operations within the ROW.

- A18-77 Construction impacts to bighorn sheep within the Kofa NWR are addressed in Section D.2.6.1.8 (State or Federal Species of Special Concern – Wildlife) under "Mammals" for Impact B-9 (Construction activities would result in indirect or direct loss of individuals, or a direct loss of habitat for sensitive wildlife), which was found to be potentially significant impact. Implementation of Mitigation Measure B-9f (Perform construction outside of breeding and lambing period) would ensure that construction would not occur during the period of the year when bighorn sheep are lambing (from January 1 to April 30) and if pre-construction surveys find sheep then SCE must consult with USFWS to identify appropriate avoidance measures. In addition, as is stated in Section D.2 (Biological Resources), the Proposed Project would comply with AGFD and BLM management policies for the bighorn sheep. Therefore, the CPUC and BLM agree with the findings in Smith et al. (1986) that construction of DPV2 through Kofa NWR would have the potential to impact bighorn sheep.

Impact B-11 (Construction activities would result in adverse effects to the movement of fish, wildlife movement corridors, or native wildlife nursery sites) in Section D.2.6.1.10 (Wildlife Corridors and Nursery Sites) has been modified to include the following discussion related to bighorn sheep. Table D.2-14 in Section D.2.10 has also been modified to include Mitigation Measure B-9f as part of Impact B-11.

Construction of the Proposed Project may also result in the temporary disturbance to breeding bighorn sheep, particularly in the Kofa NWR. Vehicle movement, equipment staging, and construction activities have the potential to temporarily disrupt breeding behavior in this species (Smith et al., 1986). Impacts to wildlife movement or nursery sites would be reduced to less than significant levels through implementation of Mitigation Measure B-9f (Perform construction outside of breeding and lambing period).

***Mitigation Measures for Impact B-11: Construction activities would result in adverse effects to the movement of fish, wildlife movement corridors, or native wildlife nursery sites***

**B-9f Perform construction outside of breeding and lambing period.**

In addition, the following citation has been added to Section D.2.11 (References) in the EIR/EIS:

Smith, E. L., Gaud, W. S., Miller, G. D., and M. H. Cochran. 1986. Studies of desert bighorn sheep (*Ovis canadensis mexicana*) in western Arizona: Impacts of the Palo Verde to Devers 500 kV Transmission Line. Final Report-Volume II. E. Linwood Smith and Associates, Tucson, AZ. Submitted to Southern California Edison Co. and Arizona Public Service Co. 51pp.

A18-78 Section D.5.2.2 (Kofa National Wildlife Refuge) of the EIR/EIS has been modified as follows:

The Kofa NWR segment is characterized by open space with Crystal Hill primitive campground located adjacent to the proposed route, and no additional recreational facilities are located within this segment.

A18-79 The text in Table D.5-6 in Section D.5.11 of the EIR/EIS has been modified as follows:

**Table D.5-6. Mitigation Monitoring Program – Wilderness and Recreation**

<b>IMPACT WR-3</b>	<b>Operation would permanently preclude recreational activities. (Class II)</b>
<b>Location</b>	At construction sites that occur within the following recreation areas: Kofa Area of Critical Environmental Concern-National Wildlife Refuge, Santa Rosa and San Jacinto Mountains National Monument, San Bernardino National Forest, Pacific Crest National Scenic Trail, Chuckwalla Valley Dune Thicket Area of Critical Environmental Concern, Alligator Rock Area of Critical Environmental Concern, Coachella Valley Preserve and Coachella Valley Fringe-Toed Lizard Area of Critical Environmental Concern, Potrero Area of Critical Environmental Concern , San Jacinto Wilderness Area, Norton Younglove Reserve.

A18-80 Impacts T-13 (Helicopter use during construction could conflict with rescue helicopter use within the Kofa National Wildlife Refuge) and T-14 (Construction use of roads could result in increased public use of unauthorized roads with the Kofa National Wildlife Refuge) have been moved to Section D.9.6.2 and Responses A18-50 and A18-51 have been modified above.

- A18-81 Impact PS-1 (Radio and Television Interference) in Section D.10.12.2 has been modified to include Mitigation Measure PS-1c (Coordinate with Kofa NWR to prevent radio interference) as follows:

Mitigation Measure PS-1c is also recommended within the Kofa National Wildlife Refuge to prevent radio interference from corona or gap discharges that could interfere with law enforcement and emergency communications, as well as with tracking radio collared animals near the transmission lines.

***Mitigation Measures for Impact PS-1***

**PS-1c** Coordinate with Kofa NWR to prevent radio interference. Prior to construction, SCE shall coordinate with Kofa National Wildlife Refuge to determine any additional design, planning, or shielding measures that are necessary to prevent radio interference within the Refuge.

Table D.10-10 in Section D.10.13 has been revised as follows to incorporate Mitigation Measure PS-1c:

**Table D.10-9 10. Mitigation Monitoring Program – Public Health and Safety**

<b>IMPACT PS-1</b>	<b>Radio and Television Interference (Class II)</b>
<u>MITIGATION MEASURE</u>	<u>PS-1c: Coordinate with Kofa NWR to prevent radio interference. Prior to construction, SCE shall coordinate with Kofa National Wildlife Refuge to determine any additional design, planning, or shielding measures that are necessary to prevent radio interference within the Refuge.</u>
<u>Location</u>	<u>Within Kofa National Wildlife Refuge.</u>
<u>Monitoring / Reporting Action</u>	<u>Review documentation of any additional design, planning, or shielding measures requested by Kofa NWR; verify that measures are installed.</u>
<u>Effectiveness Criteria</u>	<u>All radio interference concerns are resolved to prevent radio interference within Kofa NWR.</u>
<u>Responsible Agency</u>	<u>USFWS, BLM</u>
<u>Timing</u>	<u>Prior to construction.</u>

- A18-82 The references for Smith (1986) regarding bighorn sheep studies (see Responses A18-73 and A18-77) and Southern California Edison (2004) regarding DPV2 cost effectiveness have been noted. Please refer to General Response GR-3 for a discussion of project need.